DOCUMENT RESUME

ED 333 278 CG 023 432

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TITLE Resilience among High Risk Youth.
INSTITUTION Wisconsin Clearinghouse, Madison.
PUB DATE 90
NOTE 53p.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Adolescents; *Alcohol Abuse; *At Risk Persons; Children; *Drug Abuse; *Youth Problems
IDENTIFIERS *Resilience

ABSTRACT

This report focuses on children who are at risk for abusing alcohol and other drugs. It notes that the concept of risk factors is only one component necessary to understanding the range of youth drug-related behaviors. A second component, protective factors, is identified and defined as those aspects of a person's biology, psychology, and environment which serve to mediate or mitigate against substance abuse. These protective factors serve as the basis of this report. It begins by discussing protective factor research and providing an overview of the contributions derived from the mental health field. The analysis and research of several individuals and teams are highlighted in order to provide an understanding of how the concept of protective factors has been approached, the direction their insights have taken them, and the results they have achieved. Following this, the report considers the status of protective factor research in the alcohol and other drug abuse field. It is noted that several factors have been strongly identified in the literature as protective against the development of alcohol or other drug abuse; personal, social, and familial factors are listed. A third section explores issues related to protective factor research. The concluding section considers the implications of protective factor research for social policy and for prevention programming. (NB)

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CHILDREN AT RISK

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RESILIENCE AMONG HIGH RISK YOUTH

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ACKNOWLEDGEMENTS

This report is one in a series on children who are at risk for abusing alcohol and other drugs. The series owes its existence to the generous financial support of the Office on Alcohol and Other Drug Abuse in the Wisconsin Department of Health and Social Services. For three years the office has funded the Children At Risk Project in the Wisconsin Clearinghouse, enabling us to write these reports, build a significant database on current research on children at risk, and provide training on the findings of the project.

Several individuals contributed greatly to the completion of this paper. Eric Heimann served as research assistant to the project, cheerfully fulfilling a most tedious task: finding and cataloging research for the authors to use. Karen Bankston, formerly with the Clearinghouse, initially edited the report, giving several valuable suggestions. Jeff Collins, as production assistant, was critical in helping us produce the final report.

Several individuals lent their time and expertise to review *Resilience Among High Risk Youth*:

James G. Kelly, Ph.D., Professor of Psychology, University of Illinois at Chicago;

D. Paul Moberg, Ph.D., Associate Director, Center for Health Policy and Program Evaluation, University of Wisconsin-Madison;

Joan Lietzau Moen, M.S.S.W., SAP/EAP Coordinator, School District of LaCrosse, Wisconsin;

Martha Nicholson, M.A., Coordinator of Information Services, Prevention and Intervention Center for Alcohol and Other Drug Abuse (PICADA), Inc., Madison, Wisconsin;

Virginia Peterson, M.E., Counselor/Alcohol and Other Drug Director, Nekoosa Public Schools, Nekoosa, Wisconsin;

Betty Tableman, M.P.A., Director of Prevention Services, Michigan Department of Mental Health; and

Roger T. Williams, Ph.D., Associate Professor and Chairman, Health and Human Issues Department, University of Wisconsin-Madison.

Each offered helpful insights. The authors accept full responsibility for the contents of this report, however.

We hope this report contributes to a greater understanding of youth who are at risk and what can be done to strengthen their resistance to the the risks they face.

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Over the past decade, the use of "risk" as a basis for examining alcohol and other drug abuse among youth has gained in popularity among researchers and professionals working in prevention and treatment programs. Conceptions of risk have been refined as has knowledge of specific factors which appear to increase the probability that youth will start or continue to use alcohol and other drugs. With this advance has come a growing emphasis on high risk youth—those for whom the constellation of biological, psychological and social factors subjects them to a relatively greater likelihood for development of substance abuse and related problems. The advantages of such analysis seem obvious: by determining who has a greater probability of developing an alcohol or other drug abuse problem and why, prevention and treatment programs might be able to intervene earlier, more efficiently, with greater success. Though fairly new as a research and intervention paradigm, high risk theory[1] has added significantly to current understanding.

Yet risk assessment within the alcohol and other drug abuse field is not an exact science, if it ever can be. Comparing contradictory findings of recent research on the antecedents and correlates of the initiation and degree of alcohol and other drug use, Bry, McKeon and Pandina (1982) have pointed out that "although some intriguing convergences have occurred among the findings of these studies, some puzzling discrepancies have also been noted. In the past, such discrepancies could be explained by problems in research design, but current studies are well designed and well executed. Consequently, the field is now faced with the challenge of understanding disparate findings" (p 273).

One reason for the discrepancies may be that the "technology" of risk assessment is still inadequate. This allows a high degree of uncertainty in the results achieved—the factors identified, relationships between them, relative weight of specific factors for specific individuals, shifts in temporal ordering which appear to occur, and so on. Perhaps a more fundamental reason, however, involves the inadequate attention given to how risk is conceived. A reader of the substance abuse literature quickly recognizes the existence of several intricate, even elegant, theories. Yet for all the elegance, one seldom sees so much as a definition, much less an analysis, of risk as a concept. As Bell (1988) has stated, "although drug researchers have intimated that correlates of drug use relate to risk, the concept has seldom been well defined" (p 137).

A corollary of this concern involves the outcomes that risk research seeks to understand. Research generally has shown that significant numbers of people succeed in life despite even the most adverse circumstances (Quinton and Rutter, 1988; Rutter, 1979). But there has been an overwhelming bias in the substance abuse field in favor of considering what Benard (1987) referred to as "disease, illness, pathology, maladaptation, and incompetence" (p 3).

Consider the example of children of alcoholics. The number of children of alcoholics who do not themselves become alcoholic or develop serious coping problems considerably outweighs the number who do, an aspect not often discussed in the immense current focus on this population group. Reviewing the literature on the etiology of alcohol and other drug abuse, Hawkins, et al (1985) noted that adoption studies trying to uncover the genetic basis for alcoholism "reveal that less than 20% of the sons of alcoholics themselves become alcoholic. Factors other than genetic predisposition must be considered to explain why over 80% of the sons of alcoholics do not themselves develop alcoholism" (p 17). Zucker and Gomberg (1986) indicated that understanding the etiology of alcoholism requires understanding "how alcoholism does *not* develop and what produces insulation against it, as well as what contributes to it" (p 791. Emphasis in the original). And yet, as Werner (1986) has claimed, the "longitudinal literature on the offspring of alcoholics tends to focus on the 'casualties'" (p 35). Though these criticisms are specific to dependence on alcohol, they are generalizable to the rest of the field of substance abuse.

The preference for pathology to which the risk paradigm is especially susceptible poses significant problems. A heavy focus on disorder, inability and failure misrepresents

the full range of factors, forces and experiences which may ultimately produce the outcomes which research seeks to understand. In so doing, it skews the scientific, professional and popular perceptions of what is actually occurring in people's lives. It also potentially limits the chance of success of programs built on risk research which aim to intervene and assist. Some youth may, for a variety of reasons, be at higher risk for abusing substances. But they may also possess or acquire abilities and traits to survive the risks they face. And there are likely to be environmental factors within families, communities and embedded in cultural institutions that play a role in shielding these youth from the negative effects of their risky situations.

The concept of risk factors, then, is only one component necessary to understanding the range of youth drug-related behaviors. A second component, "protective factors," or those aspects of a person's biology, psychology and environment which serve to mediate or mitigate against substance abuse, are at least as important and serve as the basis of this report.

The report will discuss protective factor research, first by providing an overview of the contributions derived from the mental health field. The analysis and research of several individuals and teams will be briefly highlighted in order to provide an understanding of how the concept of protective factors has been approached, the direction their insights have taken them, and the results they have achieved. Following this, the report will consider the status of protective factor research in the alcohol and other drug abuse field, which is less developed than in the mental health arena. A third section will explore issues related to protective factor—and hence, risk factor—research. A concluding section will consider the implications for social policy and for prevention programming.

Protective factors: Overview of mental health research

A relatively new approach, protective factor research originated in the mental health field, particularly that branch examining the development of schizophrenia and, to a lesser degree, affective disorders. Beginning with Werner and Smith's research in the 1950s (1982) protective factor research in mental health emerged strongly during the 1970s due to several influences. Three historic changes assisted this outgrowth. First, a movement within medicine shifted focus away from epidemics and chronic disease and toward "social and environmental pathology and a concern for health promotion and disease prevention" (Fisher, Kokes, Cole, Perkins, and Wynne, 1987, p 211). Second, social policy and social and educational programs began to emphasize assisting people through normal developmental stages and crises. Third, more programs emerged to serve various populations viewed as "at risk" which led some to examine how to prevent disabilities (Fisher, et al 1987). Other fields were also developing theoretically. In the field of child development, for example, evolutionary and sociobiological theory helped to shift interest toward children's self-righting tendencies (Werner and Smith, 1982).

Another important influence was a growing recognition of the limitations of contemporary risk research. Researchers saw the need to study high risk populations by using prospective, longitudinal investigations. In an indepth examination of the research up to the early 1970s, Garmezy and Streitman (1973) discussed the reasons why prospective risk research had emerged at that point in psychiatry's history. First, the sociopolitical climate had been changing with an intensifying focus on civil rights, egalitarianism, and the effects of various forms of human neglect and deprivation. As society's attention turned to the underprivileged and powerless, one group that received growing recognition was the mentally ill. Second, the development of new drug therapies led to a renewed interest in biological psychiatry, incorporating the findings of genetics, neurophysiology and biochemistry. Third, the social sciences offered significant insights to the importance of language, cognition and communication as elements in the development of disordered personality. Finally, a reinvigorated developmental psychology, enabled by the contributions of people such as Piaget and Bruner, had gained interest.[2]

In addition to theoretical, social and cultural changes, shifts were happening on a smaller level as well. Researchers studying children at risk due to parental mental illness were beginning to notice what had undoubtedly always been there: even in situations of great adversity, a significant proportion of children succeeded, and some did so not only passably, but exceedingly well. Researchers were already aware that a significant proportion of children of schizophrenic parents, with whom much of the risk research originated, did not grow up to develop significant problems. Hirsch (1981) referred to evidence by Heston as early as 1966 that at least half of the children of parents with schizophrenia did not themselves show "serious symptomatology" (p 164). Early in his research, Anthony (1987b) made a "serendipitous finding" (p 147) that examination of children of schizophrenic and manic-depressive parents yielded unmistakable results of children who were "thriving under conditions that sophisticated observers judged to be highly detrimental to a child's psychosocial development and well-being" (p 147). According to Fisher, et al (1987), "the presence of these [resilient] groups was at one time viewed as a *negative* consequence of the risk research enterprise, because they reduced the percentage of subjects with diagnosable pathology, thus reducing the size of the sample on which potential etiological factors could be studied" (p 212. Emphasis in the original).

Dissatisfaction with the direction of risk research developed as early as 1971 when Garmezy addressed the "false sense of security in erecting prevention models that

are founded more on values than on facts" (1971; p 114) and expressed concern over the "prolonged neglect of the 'invulnerable' child—the healthy child in an unhealthy setting" (p 114). In 1974, Garmezy stated the issue clearly: "What is needed in the study of risk is to demarcate the adaptive from the maladaptive children—to examine the research data of those children who reveal manifestation of maladaptation from those who are moving along paths to maturity" (1974a, p 108).

The interest by researchers in moving away from simply examining risk for mental illness and toward the incorporation of protective factors of children who were at high risk marked a watershed in risk research. Many have added valuable findings and insights, but it is the particular contributions of Garmezy, Rutter, Anthony, Murphy and Moriarty, Werner and Smith, and Feldman, Stiffman and Jung, which will be highlighted.

Norman Garmezy

One researcher who has forcefully, critically and consistently raised the issue of protective factors in children at risk is Norman Garmezy. Garmezy has been the principal investigator of Project Competence in Minnesota which began its studies in 1971. Drawing from the insights of developmental psychology, that project studied the development of children at risk not only with an eye toward vulnerability and eventual breakdown but also toward adjustment and adaptation (Garmezy and Devine, 1984).

Garmezy, whose writings on schizophrenia extend back at least as far as 1952, brought to his tasks a significant knowledge and grasp of risk research (and its shortcomings) in schizophrenia. Cognizant of the benefits of risk research, Garmezy recognized the importance of also studying adaptive behavior both in children who were at risk for schizophrenia and in those who were not. In 1974, Garmezy (1974a) argued that risk researchers needed a knowledge of the development of competence in normal children which would provide "the risk researcher with the baseline data necessary to appraise early signs of deviant (i.e. incompetent) development in vulnerable children" (p 96). He raised several questions (which in part remain unanswered today).

> Consider the child who meets various criteria for competence appropriate to his age. Are such criteria applicable to a single milieu or are they transsituational? Is the child who is manifestly competent in the setting of the school one who tends also to be manifestly competent when at play in streets or playground? If competence is to be a significant indicant of ultimate adaptation, it should be evident across situations (or at least the more it is evident across situations, the greater should be the stress-resistant qualities of the child). At this point, however, we have no data to make an assertion one way or another. (1974a, p 97)

Garmezy claimed that if researchers studied "the forces that move [at risk] children to survival and to adaptation, the long-range benefits to our society might be more significant than our many efforts to construct models of primary prevention designed to curtail the incidence of vulnerability" (1974a, p 108).[3]

In 1972, he and a colleague published a brief report regarding their review of the literature on economically disadvantaged children who remained competent despite their being exposed to poverty (Garmezy and Nuechterlein, 1972).[4] The authors identified individual, familial and social qualities which promoted children's competence (Table 1).

Table 1. Competencies and Protective Factors of At Risk Children

Individual	*Familial*	*Social*
Child regards self highly, does not derogate self • sees positive attributes in self • senses a quality of personal power for influencing events in their environment (i.e., internal locus of control)	Family not necessarily intact but homes have order not only to physical environment but to [the use and structure of] time	Child possesses social skills, is friendly, well-liked by peers, with interpersonal ease (capable of relating well to adults as well as peers in the course of play and social exchange)
Child is intellectually competent • performs well in school • brings to their test behavior an appropriate sense of caution which may relate to impulse control and reflectivity	Parents concerned that children develop a sense of competence but see children as children and maintain role separation between child and parent	There is at least one adult who has positively touched the child's life
Child is highly motivated to perform well	Parents perceive child as individual fully entitled to self-direction as s/he strives to achieve growth and autonomy	Child has positive attitude toward adults and authority in general

Adapted from Garmezy (1974, 1983)

Through Project Competence at the University of Minnesota, Garmezy had begun his own research on competence in children at risk. The project examined the competence of several different groups of children with identifiably different stressors: children already showing signs of early maladaptation; children at risk due to parental psychiatric disorder; normative, heterogenous children drawn from school populations; children with life-threatening, congenital heart defects; and children with severe physical disabilities mainstreaming from a special school into a regular public school classroom (Garmezy, Masten, and Tellegen, 1984).

Early in the project, Garmezy and his colleagues built age-related competence indices, using criteria from their literature review. They then measured these against "competent children who might also be considered to be at risk" (Garmezy, 1974b, p85).[5] The final six criteria of competence chosen were:

1. Effectiveness in work, play and love; satisfactory educational and occupational progress; peer regard and friendships.
2. Healthy expectancies and the belief that 'good outcomes' will follow from the imposition of effort and initiative; an orientation to success rather than the anticipation of failure in performing tasks; a realistic level of aspiration unbeclouded by unrealistically high or low goal-setting behavior.
3. Self-esteem, feelings of personal worthiness, a proper evaluative set toward self and a sense of 'fate control,' that is, the belief that one can control events in one's environment rather than being a

passive victim of them (an internal as opposed to external locus of control).
4. Self-discipline, as revealed by the ability to delay gratification and to maintain a future-orientation.
5. Control and regulation of impulsive drives; the ability to adopt a reflective as opposed to an impulsive style in coping with problem situations.
6. The ability to think abstractly; to approach new situations flexibly and to be able to attempt alternate solutions to a problem. (Garmezy, 1974b, p 86)

Project Competence produced three models for examining the interactions between stress, personal attributes and the quality of adaptation. In the first, a *compensatory* model, stress and personal attributes were considered additive in predicting competence. If personal attributes were held constant, a higher number of stressors would result in lower competence. The opposite also would result. Similarly, if stress were held constant, the more adaptive attributes a child had, the greater degree of competence they would exhibit and vice-versa (Garmezy, Masten, and Tellegen, 1984). The second model, a *challenge* model, posited stress to be potentially enhancing of competence, as long as the level of stress is not excessive. In the last model, the *protective factor* or *immunity-versus-vulnerability* model, a conditional relationship existed between stress and personal attributes of protection and vulnerability. Thus, if protective factors were present, stress on a child would have less impact and if vulnerabilities were present, the impact of stress would be greater.

Garmezy has offered important contributions to the area of protective factor research. However, the value of his work lies more with laying the groundwork for examination of such factors than in empirically identifying protective factors themselves, at least as far as the non-literature review portion of Project Competence is concerned. A review of Garmezy's published work on Project Competence indicates that even it is heavily laden with an emphasis on what appears to increase the risk of children rather than on what appears to enhance their resiliency and what seems to increase incompetence rather than the reverse. Even for an advocate of protective factor research such as Garmezy, it seems to be much easier to delineate factors contributing to what goes wrong than to what goes right in children at risk for mental illness.

Michael Rutter

A researcher who has contributed empirically to the knowledge of protective factors in children at risk is the London psychiatrist, Michael Rutter. Rutter and a colleague defined protective factors as "influences that modify, ameliorate or alter a person's response to some environmental hazard ... [They] need not be pleasurable and, unlike positive experiences, may have no detectable effect in the absence of any subsequent stressor" (Quinton and Rutter, 1988, p 12). Protective factors can be constitutional as well as experiential, social as well as individual. Though protective, such factors may be unappealing to some: "Several investigators have noted that those who are immune to stress are often more self-centered and shallow in their relationships" (Quinton and Rutter, 1988, p 13).[6]

Rutter (1974) sought to make information about risk and protection useful to researchers and clinicians by detailing several epidemiological strategies for performing research on vulnerable children. The strategies involved examining different population groups—those at high risk due to background variables (e.g. children with a parent diagnosed as mentally ill); those at risk due to factors in the child (e.g. child disability); the general population; two populations comparatively; and different generations. He emphasized the importance of moving beyond the simple attribution of

psychiatric disorders to multiple factors. He believed it was "necessary to pin down which factors are more important for which outcomes, what types of interactions are present and what mechanisms are operative" (Rutter, 1974, p 176). Rutter reviewed the research on children at risk for psychopathology and found several factors which appeared to moderate the risky situation: a positive relationship with at least one parent; a change to a more harmonious home environment; sex (being female, with respect to some but not all stresses), and an easy temperament.

Surveying the research on protective factors five years later, Rutter (1979) commented that it was still "quite exceptional for anyone to study the development of those important individuals who overcome adversity, who survive stress, and who rise above disadvantage." He wondered: "Would our results be better if we could determine the sources of social competence and identify the nature of protective influences ... The potential for prevention surely lies in increasing our knowledge and understanding of the reasons why some children are *not* damaged by deprivation" (p 49. Emphasis in the original). He noted that invulnerability was a relative term and that it would be misleading to believe that resilient children had totally "escaped damage" or been "unaffected by their experiences" (p 51), since in fact there seemed to be some effect, obvious or not.

Rutter (1979) discussed his studies comparing children at psychiatric risk from the Isle of Wight and inner city London and pointed to the interaction effect of stresses as an important marker for potential disorder. He found that as the number of stresses increased, the potential for disorder seemed to increase by several fold. The net effect of multiple stresses was greater than the sum of the individual parts. Rutter also found that those children who came back to a favorable home environment following hospitalization were less likely to develop psychiatric disorder.

Other protective factors for which Rutter (1979) found some, but not unqualified, support in the literature were: genetic factors that influenced how people adapted and responded to their environment; temperament which, if it were positive, helped to some degree to keep a child from being the scapegoat of negative parental attention; sex, in that girls were less susceptible than boys to physical and some psychosocial stress and trauma; school environment and work opportunities; high self-esteem; family structure and control, meaning "good supervision and well-balanced discipline" (p 64); bonding by high risk children with a relative who possessed high warmth and who was not severely critical of the child; a change in family living situation if the current family was characterized by discord or severe family relationship problems; early bonding between a child and a significant adult; and, possibly, coping skills[7] and a wider range of opportunities. Rutter (1985) also concluded that the timing of life events and their meaning to a child were important in whether the result would be beneficial or adverse.

Rutter and his colleague David Quinton also have examined the intergenerational transmission of parenting problems using a dual prospective-retrospective design (Rutter and Quinton, 1981; Rutter and Quinton, 1984; Quinton and Rutter, 1988). For the prospective portion of their study, Quinton and Rutter selected a subsample of 93 female children living in one of two residential care facilities who had been part of an earlier study by King, Raynes and Tizard (cited in Quinton and Rutter, 1988). They used a comparison group of 51 children which had originally served as the control group of an earlier study of children with parents with psychiatric disorder. The comparison group was the same age, had lived with their families in inner London, and had never been admitted to substitute care.

The retrospective study consisted of two samples. An in-care sample was made up of 48 families from an inner London borough from which children had been admitted into residential care during an eight-month span. Families were included only if neither parent had been born abroad and if none of the children demonstrated

physical or mental disabilities.[8] The retrospective sample also included a comparison group drawn randomly from the registers of two general medical practices in the same inner London borough. The 47 families in the retrospective comparison sample had a child (of the same age as the in-care sample) living at home, and the families had no history of a child having been taken into care by local authorities.

Quinton and Rutter looked at the patterns of association between current parenting breakdown and childhood adversity and examined the strength of associations across generations. They found a significant degree of psychiatric disorder in the parents of women placed in institutional care. The primary reasons the women were placed as children in such care had to do with parenting breakdown and not behavioral disturbances by the children. Yet despite this, "many of the ex-care women did *not* show poor parenting and a substantial minority showed good parenting" (Quinton and Rutter, 1988, p 179. Emphasis in the original.) Among the factors which helped to mediate and/or ameliorate their higher risk for serious problems later as parents were: positive school experiences (which helped initiate or continue a sequence or chain of positive circumstances); a harmonious family environment upon returning home from institutional care; a supportive spouse with whom the woman related warmly, in whom she could confide, and whose selection was not based on the press of circumstances, such as pregnancy; and the ability to plan the future, a characteristic which the researchers found especially related to the selection of spouse and work, but which also seemed to represent a larger, more general ability.

Rutter and his colleagues have suggested several concepts which might help to explain positive and negative outcomes, resiliency and breakdown. Sroufe and Rutter (1984) offered a conceptual model of developmental psychopathology in which each individual develops in a coherent manner which allows for both change and continuity. Borrowing from the work of Santostefano (cited in Sroufe and Rutter, 1984), they pointed to the "mobility of behavioral functioning."

> Previous modes of function are currently available and are part of the person's ongoing adaptation, at times promoting improved fit to the environment, though at other times compromising growth. Not the presence or even the employment of less differentiated, early modes connotes pathology, but rather their inflexible use with regard to the ongoing adaptational task. (p 21)

The concept of continuity was further developed by Quinton and Rutter (1988) who emphasized the need to study the "linking" of adverse environments in childhood and those confronted later in life. They saw three possible links: those which occur independently of, those which arise indirectly as a consequence of, or those which directly result from an individual's behavior.

To Rutter (1985), links within an individual's development and between his/her past and current environments are important because protective factors "operate through their effects, both direct and indirect, on chain reactions over time; inevitably, this means that the analysis of protective processes must examine each of the individual links in such longitudinal chains" (p 606).

E. J. Anthony

In his recent book, *The Invulnerable Child*, Anthony (1987) discussed his continuing exploration of what it is that allows some children at risk to be resilient. Repeating an often used analogy which he borrowed from Jacques May, Anthony contrasted risk, vulnerability and resilience.

> ...three dolls made of glass, plastic, and steel and exposed to the same risk, the blow of a hammer. The first

> doll breaks down completely, the second shows a dent that it carries permanently, and the third doll gives out a fine metallic sound. Of course, the 'outcome' for the three dolls would be different if their 'environments' were to buffer the blows from the hammer by interposing some type of 'umbrella' between the external attack and the recipient. (1987a, pp 10-11)

Anthony acknowledged the analogy's limitations: different environments can buffer children differently and the risks children encounter are not uniform. But his repeated use of May's example symbolized his attempts from early in the field's development to conceptualize a range of issues and to relate them to readers through the use not only of empirical research but the unscientific yet often insightful contributions of literature and myth. Having published extensively on the subject of vulnerable and at risk children, Anthony has helped in his writings to organize the research of others examining protective factors. He has also raised significant questions regarding the nature and structure of risk and protection.

In the late 1960s, Anthony began to study not only risks but "immunities ... defenses, competences, and coping skills" which subjects "forged for themselves in the service of psychological survival" (1978; p 3). As the principal investigator for a longitudinal study at Washington University in St. Louis, Missouri, Anthony, a psychiatrist, examined subjects in three samples: an experimental group of children with a parent diagnosed as schizophrenic but lacking evidence of serious physical impairment or organic brain disease; a comparison group of children whose sick parent was physically but not psychiatrically or neurologically ill; and a control group of children from families where parents suffered from neither mental or physical illness.

Anthony attempted to analyze the risk of individuals along seven dimensions—genetic, reproductive, constitutional, developmental, physical health, environmental, and traumatic—with scores in each dimension ranging from low to high risk (1974a). Admitting that the measure was "a crude expression of a complex reaction tendency" (1974a, p 103), Anthony nevertheless believed that it could provide a "numerical assessment as well as a more analytic approach to a global concept" (p 103). However crude the tool, it helped Anthony to confirm that different siblings raised in the same family with the same parents and environment may experience different levels or types of risk.

Anthony's early work prompted him to construct a series of two-by-two grids plotting the relationships between risk, vulnerability and psychiatric disturbance (Figure 1).

In a later study, Lander, Anthony, et al. (1978) studied 141 children drawn from the larger continuing research effort. The children came from families in which a parent had been hospitalized for schizophrenia or manic-depression. The researchers hypothesized they could identify highly vulnerable children on the basis of how closely involved and identified the children were with the psychotic parent and whether the children had personality traits of "submissiveness and suggestability" (p 326). The research team constructed a vulnerability rating scale which contained eight items reflecting these two characteristics. Following Anthony's rating of the children, two groups—the highly vulnerable and the low vulnerable—were drawn from the original sample. Each subject in the two subsamples were then rated blindly on fourteen different items by three clinical psychologists.

The team found that factors which protected the children from the negative effects of parental psychosis included: the children's confidence; their ability to distance themselves psychologically from the mentally ill parent; and their ability to resist pressures to be involved submissively with, and thereby to internalize the disturbed thought processes of, that parent.

Figure 1. Relationship of Risk, Vulnerability and Disturbance

	High Risk	Low Risk
High Vulnerability	(1) HR, HV	(3) LR, HV
Low Vulnerability	(2) HR, LV	(4) LR, LV

	High Risk	Low Risk
Disturbed	(1) HR, D	(3) LR, D
Nondisturbed	(2) HR, ND	(4) LR, ND

	High Vulnera-bility	Low Vulnera-bility
Disturbed	(1) HV, D	(3) LV, D
Nondisturbed	(2) HV, ND	(4) LV, ND

From Anthony, E.J. (1974). The Syndrome of the Psychologically Invulnerable Child. In *The Child in His Family: Children at Psychiatric Risk*, E. James Anthony and Cryille Koupernik, eds. (p. 538). Copyright © 1974 by John Wiley & Sons, Inc. Reprinted by permission of John Wiley & Sons, Inc.

In a later work, Anthony (1987a) reported additional protective factors shown from his longitudinal study. He found that resilient children have two major types of coping strategies and competence. *Constructive competence* encompassed practical problem solving abilities; the ability to organize, plan and pursue a course of action; and the ability to work independently and within a group. Resilient children with constructive competence enjoyed and valued their autonomy, but also recognized when to call upon others for help and assistance. *Creative competence* in resilient children involved the ability to transcend the situation and methods at hand, to "move from the practical to the abstract and solve the problems 'inside his head'" (1987b, p 149). Anthony reported that a child's incorporation of a sense of something beyond him or herself (through religious involvement, for example) could be a source of protection and strength.

Anthony found that the type of mental illness in the affected parent, whether schizophrenia or manic-depression, could itself be a protective factor. Schizophrenia was characterized by more active attempts on the part of the psychotic parent to engage the child in disturbed thought processes, whereas the manic-depressive illnesses were characterized more by withdrawal from family members.

In a ten-year follow-up of the high- and low-vulnerables, Anthony (1987b) found that the type of manic-depressive disorder of the affected parent was significant. A greater number of unipolar as opposed to bipolar parents had offspring with no signs of clinical disturbance. He also found the nonpsychotic parent to be important: the more "normal" that parent was, the more likely the child was not to have clinical disturbance (1987b, pp 177-178).

In a concluding note to his findings, Anthony stated that protective factors may have their own price. He pointed out that the same mechanisms used by resilient children to distance themselves from their affected parents carry through to adult life creating difficulties in achieving and maintaining intimacy. Resilient children may join outside groups for the ego support they can achieve, but Anthony believed this tends to diffuse and dilute relationships.

Lois Murphy and Alice Moriarty

Working at the Menninger Foundation, Lois Barclay Murphy and Alice Moriarty explored vulnerability and coping across the life span from infancy to adolescence in a group of normal children. Beginning in 1953, they followed 32 children ranging in age from two to five years old. The children were drawn from a previous sample of infants living in Topeka originally studied by Sibylle Escalona and Mary Leitch, also of the Menninger Foundation. Between 1948 and 1951 Escalona and Leitch had conducted developmental and pediatric examinations, home interviews, and detailed examinations of infant-mother interactions with the children, aged 4 to 32 weeks old.

Murphy and Moriarty studied "children's efforts to cope with their own problems and to explore the relation of these efforts to aspects of temperament and resources for growth," (Murphy and Moriarty, 1976, p xi). They randomly selected 16 boys and 16 girls from the original sample who were still living in Topeka. The children were fairly representative of the original sample and all were "free from defect or serious deviations—that is they were 'normal' babies" (1976, p xiv).

The two researchers made detailed observations of the natural history of the children combined with pediatric, psychological and psychiatric exams at four periods or levels of development following the children's infancy. At the preschool stage, the researchers were particularly interested in several issues: how children coped with the challenges of separation from their mother and new and strange experiences; what cognitive, motor or social skills, individually or in combination, the children used and how they used them to meet challenge, difficulty and failure; and how they experienced "body threat, damage, or pain" (1976, p xvi). During the children's latency stage, from ages five to eight years old, the researchers continued and repeated their previous examinations so as to follow change and continuity in coping in the children at the primary school age. The research team quantified their earlier qualitative data by developing clinical ratings of the children. The researchers began to examine relationships between "different aspects of functioning and between a child's behavior and aspects of the environment" (1976, p xviii). The puberty and late adolescence studies focused on mental health maintenance and included consideration of family activity, communication, discipline, and mother's support of children. The researchers were interested in the youths' reactions to stressful events, not only personal and familial ones, but also those occurring on a larger scale: for example, the team studied the youths' responses to the November 1963 assassination of President Kennedy and a damaging June 1966 tornado which struck the city of Topeka.

Murphy and Moriarty found that children in their study had two types of vulnerability. Primary vulnerabilities resulted from genetic and constitutional factors or because of problems arising in pregnancy, birth and the first six months of infancy. Secondary vulnerabilities developed "out of the integration difficulties *contributed by interaction of primary vulnerabilities with one another and with the environment*" (p 212. Emphasis in the original). They discovered a continuum of robustness-vulnerability along which children fall, with few falling at either end of the spectrum. Rather, "most children have a checkerboard of strengths and weaknesses, or an 'Achilles heel,' or a cluster of tendencies that interact in such a way as to produce one or another pattern of vulnerability as well as strength" (1976, p 202).

Relying on data derived from their Comprehensive Coping Inventory, Murphy and Moriarty separated children's abilities to cope with challenges and vulnerabilities into two categories. Coping I involved "active problem solving," making use of opportunities and effectively responding to demands, challenges and barriers in the child's environment. Coping II encompassed the maintenance of internal balance and integration under stress (1976, p 388).

In a recent commentary, Murphy (1987) detailed the factors which led to resilience in the children she studied. These included: trust and hope; effective communication skills; stable yet flexible relationships; stress management skills; a range of emotions; the capacity to satisfy needs and delay their gratification; the capacity to continue efforts despite frustrations; the ability to maintain and renew positive relationships and to recover from negative ones; positive attitudes; autonomy appropriate to developmental stage; a balance of freedom and control; and the ability to act on the environment, to manipulate it to achieve goals.

Murphy suggested that factors promoting resilience could be divided into two categories: (1) biological, physical and psychological aspects which enhance the child's ability to recover; and (2) those factors that enable the child to avoid threats or lessen their impact (e.g. the means a child has to reduce, control, balance or eliminate threats and to handle the tensions aroused therein).

Murphy concluded that "the roots of early coping skills lie in the baby's active protests and selectivity, and the young child's capacity to accept substitutes and restructure a situation" (1987, p 104). An important correlate is the development of optimism in early childhood. According to Murphy, "some children and adults ... want to be resilient, and actively mobilize and respond to anything and everything that will contribute to recovery" (1987, pp 103-104). For Murphy, a bias toward optimism evoked resilience.

Emmy Werner

In 1954, Emmy Werner and her colleagues began a study on the island of Kauai, Hawaii, which has come to be one of the most important and enlightening studies of protective factors currently reported. Operating in the theoretical milieu of the 1950s, when child development researchers considered constitutional and environmental factors to have independent influences on development, Werner realized that the predictive power of such a model was weak. She thought it was also important to consider how constitutional and environmental factors interacted to produce developmental outcomes in youth. This interactional approach, which shaped the Kauai studies, led researchers to conclude that "it is the balance between risk, stressful life events, and protective characteristics in the child and his caregiving environment that appears to account for the range of outcomes encountered" (Werner and Smith, 1982, p 5).

Werner's study followed all children born in 1955 on the island of Kauai. The 698 children came from a wide range of socioeconomic, racial and ethnic backgrounds (the majority of the children followed were not caucasian and included Japanese, part- and full-Hawaiian, Filipino, "other ethnic mixtures," and Portuguese).[9]

The study began the year before the children's birth, in 1954, when the researchers assessed mothers' physical and emotional health and took family histories. At birth, pediatricians rated each child, emphasizing conditions with potential adverse effects. A year later, public health nurses and social workers conducted home visitswith each family, assessing the quality of the caretaking environment, temperament of the child and stressful life events.

When the children were two, ten and eighteen years old, the researchers conducted extensive follow-up exams of physical and emotional health, cognitive and intellectual functioning, home environment, family interaction, and parenting style. In addition to the tests they performed themselves, the team gained access to records of agencies such as the police department, family court, schools, hospitals and other health care providers, mental health center and state mental health register.

Not content to report on the casualties of life, Werner and Smith examined the nature of resiliency displayed by children who faced

significant challenges. To do this, they drew three subsamples from the original group to study. The target group consisted of 42 female and 30 male youth who by age two years had been confronted with at least four cumulative risk factors but who nonetheless coped successfully.[10] Comparison Group I comprised 39 female and 51 male youth who by age ten years demonstrated serious learning and/or behavioral problems. Forty-three females and 49 males constituted Comparison Group II, a sample marked by the youths' having demonstrated at age eighteen years significant delinquency and/or mental health problems as evidenced by records from the police department, family court, schools, mental health center and state mental health register.[11]

It appeared that the odds were seriously weighted against the children. Werner and Smith reported that all of the resilient children were born and raised in economically disadvantaged families. Their fathers were semi- or unskilled laborers. Their mothers more often than not failed to complete high school; about half did not make it past eighth grade. The resilient youth had a higher incidence of low birth weights, more than twice the proportion found in the total sample of 698 children studied. And the resilient boys' mothers were significantly younger than the mothers in the comparison groups.

Still, the youth persevered and Werner and Smith sought to discover why. They broke down the factors which promoted the children's resilience into four categories by age. Resilient infants, those from birth through the first year of life, were more likely first-born, especially if they were male. They might have been subject to birth complications, but they tended not to have congenital birth defects. The infants who were resilient had large amounts of energy, were perceived by caretakers as very active and responsive socially. They were able to "elicit and receive a great deal of attention during the first year of life ... [and] rarely experienced prolonged separations from their primary caretakers during the critical time period for the development of attachment" (Werner and Smith, 1982, p 59).

From the first through the second years of life, resilient children developed more competence in several areas. Their growing social competence was indicated by their ability to confront the world in their own way, without being defensive, shy or fearful. They could elicit positive responses from those around them, a factor which appeared to carry forward from their infancy. Their social orientation was positive, especially that of the resilient girls. Both boys and girls demonstrated independence and autonomy. The resilient children were perceived as quick, facile and alert. They had already developed coping abilities which not only provided structure but were flexible enough to allow them to seek support as they needed it. Bonding with their mothers was positive, marred by less disruption. And the resilient youth displayed "behavior judged by observers to be appropriate for their social sex roles" (Werner and Smith, 1982, p 68), that is, the observers found the resilient boys to demonstrate "masculine" behavior more often than comparison children and the resilient girls to demonstrate "feminine" behavior in comparison to the girls who developed serious coping problems (p 63).

By age ten sex differences in protective factors seemed to become more pronounced. The stressful events encountered by resilient girls at this age, for example, appeared to mature them, helping them to become more independent and competent. This was especially the case if there were someone besides their mother who could give emotional support. In comparison to resilient boys, resilient girls overall had more siblings and a larger number of people who lived in their households. For resilient girls the father's absence from the home had, in certain circumstances, the effect of maturing them and promoting their resilience; for resilient boys the presence of the father was more protective. Other protective factors for resilient boys were lower family discord, structure within the home, and fewer people living in the household. In contrast to observers' indications that resilient children at age two

demonstrated social sex role appropriate behaviors, Werner and Smith reported that resilient children at age ten showed complementary attributes: "autonomy and independence for the resilient girls; caring and nurturance for the resilient boys" (1982, p 82).

During adolescence another set of factors aided resiliency. One set of attributes involved some level of commitment to conventional social norms and mores. Resilient youth were "responsible," oriented toward achievement, and possessed an internalized complement of values which they used in their lives.

Another cluster of protective attributes appeared to center around the children's internal balance. Werner and Smith (1982) found that the resilient adolescents appreciated the "need for some structure in their lives," (p 89) and were "whole persons" in that they incorporated a combination of traditionally defined masculine and feminine characteristics. The authors noted that the youth came "as close as any people we know of to a healthy androgyny" (p 93).

A third grouping of factors involved family relationships. A positive relationship with the father was found to be very important at this age, discriminating especially for those young women at risk who remained resilient. The youths' bond with their mothers continued to remain important as a protective factor. Closeness of the family, familial respect for the youths' individuality, clear family rules, limits and discipline, and faith (presumably religious) also promoted positive outcomes in the youth at risk.

A fourth type of protective factors revolved around interpersonal support including family emotional support. Persons outside the family—peers, older friends, ministers, and some teachers—widened the natural helping networks on which resilient youth could rely in times of need, turning to them rather than to professional services available in the community. Finally, those youth who remained resilient faced fewer stressful life events, a factor found across the developmental lifespan.

In addition to the youth just discussed, Werner and Smith (1982) also examined factors which promoted resiliency among two other subgroups of children: children with a parent with psychiatric problems; and youth who had been at risk at age ten, as shown by serious learning and/or behavioral problems, but who by age eighteen had somehow improved.

For children with a mentally ill parent, the nature of the parental illness appeared to play a role in protection. Resilient children tended to have parents who had affective rather than schizophrenic disorders. The youth had fewer congenital defects. The quality of the mother-child interaction was instrumental; resilient children more often had mothers who perceived the children "as 'good-natured' and 'easy to deal with' when they were infants" (Werner and Smith, 1982, p 108). The mothers' interactions with their babies during the first year of life were mostly positive. Resilient children were more independent, autonomous and socially oriented at twenty months old. These youth had more emotional control at home and more behavioral control in the classroom at ten years of age. They tended to have an internal locus of control during adolescence. Again, fewer stressful life events discriminated resilient children from those who were not resilient in this group.

The subsample of youth who showed improvement from age ten to age eighteen were from families with fewer children and had older fathers (Werner and Smith, 1982, p 124). They were seen by their mother as good-natured and easy to deal with during infancy. Family relations tended to be more harmonious during adolescence, with improved girls indicating their relationships with their mothers were better and both improved boys and improved girls relating better with their fathers. Girls showing improvement were not as likely to be pregnant as teenagers. Once again, the fewer the number of stressful life events, the greater the prospect for positive outcome within the targeted study group.

Summarizing their findings, Werner and Smith presented a model of the interaction between risk, stress, sources of support and coping, reproduced in Figure 2.

Figure 2. Model of interrelations between Risk, Stress, Sources of Support, and Coping (based on data from the Kauai Longitudinal Study)

Major Risk Factors (at birth)
Chronic poverty
Mother with little education
Moderate-severe perinatal complications
Developmental delays or irregularities
Genetic abnormalities
Parental psychopathology
VULNERABILITY
Major Sources of Stress
In Childhood and Adolescence
Prolonged separation from primary caretaker during first year of life
Birth of younger sib within two years after child's
Serious or repeated childhood illnesses
Parental illness
Parental mental illness
Sib with handicap or learning or behavior problem
Chronic family discord
Father absent
Loss of job or sporadic employment of parent(s)
Change of residence
Change of schools
Divorce of parents
Remarriage and entry of step-parent into household
Departure or death of older sib or close friend
Foster home placement (for F: teenage pregnancy)
Protective Factors Within the Child
Birth order (first) CNS integrity
High activity level
Good-natured; affectionate disposition
Responsive to people
Free of distressing habits
Positive social orientation
Autonomy
Advanced self-help skills
Age-appropriate sensorimotor and perceptual skills
Adequate communication skills
Ability to focus attention and control impulses
Special interests and hobbies
Positive self-concept
Internal Locus of Control
Desire to improve self
Major Sources of Support
Caregiving Environment
Four or fewer children spaced more than two years apart
Much attention paid to infant during first year
Positive parent-child relationship in early childhood
Additional caretakers besides mother
Care by siblings and grandparents
Mother has some steady employment outside of household
Availability of kin and neighbors for emotional support
Structure and rules in household
Shared values—a sense of coherence
Close peer friends
Availability of counsel by teachers and/or ministers
Access to special services (health, education, social services)
RANGE OF PROBABLE DEVELOPMENTAL OUTCOMES
Adaptive
Maladaptive
Fewer
Risk Factors
Stressful events
:
More
Risk Taking
Stressful Events
More
Protective factors in child in caregiving environment
:
Fewer
Protective factors in child in caregiving environment

From Werner, E.E. and Smith, R.S. (1982). *Vulnerable but Invincible: A Longitudinal Study of Resilient Children and Youth* (p.134-135). Copyright © 1982 by McGraw-Hill Publishing Company. Reprinted by permission of McGraw-Hill Publishing Company.

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Feldman, Stiffman and Jung

A recent analysis of protective factors was reported by the research team of Ronald Feldman, Arlene Rubin Stiffman and Kenneth Jung (1987). Using a cross-sectional design, the Web study, as the researchers called it, examined 306 children living in St. Louis who had a mentally ill parent.

By collecting information from parents, other family members, referral sources, school professionals, therapists and the children themselves, the Web study attempted to determine the presence/absence of behavior problems in the children, environmental stressors and protectors to which the children had been exposed, and coping strengths or weaknesses the children possessed.

The researchers found that children's behavior problems did not vary by sex, race, age or religion. Among the parental factors which appeared to be protective were a physical separation between the child and the mentally ill parent; parents who were older in comparison to other parents when the children were born; Protestant religious affiliation;[12] the mother's inability to function if the impairment results from mental health problems; the mother's having a non-affective as opposed to an affective mental health disorder; a father who, if mentally ill, is hospitalized; and having only one parent, rather than both, with mental illness (Feldman, Stiffman and Jung, pp 116-117).

Families in which fewer siblings were mentally ill resulted in lower incidence of behavior problems for the children. The researchers suggested that "it is the relative *proportion* of such siblings that best predicts disorder on the part of the at-risk child" (Feldman, Stiffman and Jung, p 142. Emphasis in the original). The team also found large family size to be protective, contrary to results of other studies. A healthy relationship with low discord between mother and child also protected children.

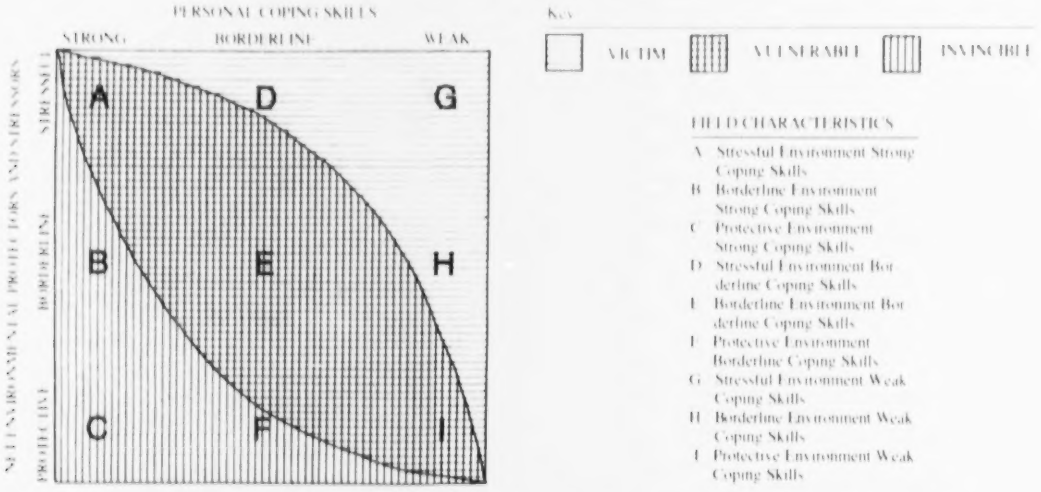
The Web study examined life events in six areas: moving to a new setting; changes in the family composition through birth, death or divorce; health problems; failure in school; delinquency; and other stressful, but unspecified, life events. The researchers found that the absolute number of stressful life events was less important than the relative balance between those stressors and protective factors within the child's environment. Other aspects suggested by Feldman, Stiffman and Jung which affect the degree to which life events potentiate mental health or behavioral problems in children were frequency of events, child's awareness of them, and the degree to which they were perceived as stressful. The Web study did not find support for the suggestion that age of occurrence of stressful life events was important; the authors suggested that searching for such a connection was "in vain" (p 166).[13]

The researchers found that an alternative family setting was protective, due to less mother-child discord and a lower proportion of people with mental illness in the family setting. Feldman, Stiffman and Jung suggested that competent parental substitutes can assist a child to overcome the stress of life events and turn them to constructive ends. The researchers suggested that the better a child is at eluding the biological parents' web of mental illness, the lower his/her risk will be. They urged rethinking "the hallowed principle that at-risk children should seldom be placed away from their biological family" (Feldman, Stiffman and Jung, p 183).

The Web study found coping skills, self-esteem, activity competence and social competence negatively related to behavioral problems. However, whereas some researchers have found such areas to be significantly related to resilience in high risk youth, Feldman, Stiffman and Jung cautioned that high functioning in such areas is not the polar opposite of behavioral problems. They found, for example, that children in families with a higher proportion of mentally ill members showed greater social and interpersonal competence, a result consistent with Rutter's (1981b) observation that coping processes can be adaptive as well as maladaptive.[14]

Feldman, Stiffman and Jung offered a social interaction model to explain the outcomes in children at risk. The model, represented in Figure 3 reproduced from their work, hypothesizes that the outcome—victim, vulnerable, invincible—for any given child depends upon the balance between personal coping skills and net environmental protectors and stressors. Children who fall into fields D, G, and H are likely to be victims of their situation, those in A, E, and I, to be vulnerable, and those in B, C, and F to be invulnerable. Children in C would be the most resilient, those in G, the most disordered. Those in fields B, D, F, and H would be approaching respective borderlines between resilience, vulnerability and victimization.

Figure 3. Net Environmental Protectors and Stressors, Personal Coping and Childhood Vulnerability to Mental illness



From *Children at Risk: In the Web of Parental Mental Illness* by Ronald A. Feldman, Arlene Rubin Stiffman and Kenneth G. Jung, eds. (1987), p 59. Copyright © 1987 by Rutgers, the State University. Reprinted with permission of Rutgers University Press.

Contributions of Other Researchers

Other researchers have reported findings of interest in the development of successful outcomes among children at risk. Kauffman, Grunebaum, Cohler, and Gamer (1979) examined a small number of highly competent children of psychotic mothers. These "superkids," as they called them, were distinguished by a number of protective factors. The children's mothers were better able to meet their own needs, had greater social contacts characterized by greater satisfaction, demonstrated greater work efficiency, and showed fewer signs of psychiatric symptoms. Contrary to the results of other research, these resilient children had mothers who were more often diagnosed as schizophrenic or schizoaffective, rather than as having an affective disorder. Kauffman, et al (1979) attributed this to "the apathy and lethargy shown by severely depressed mothers [which] appears to have a more deleterious impact on the child's development than the alterations in mood and cognitive disturbance of the schizophrenic mother" (p 1401). In those children who were competent, the interaction between mother and child, despite there being a psychiatric

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diagnosis, was positive, with the children being given caring attention from the mothers during the seven years prior to the study. The children themselves had significant contact with an adult outside the family. Their general ability to form social contacts outside the home seems to have given them distinct advantage. In addition to having age-appropriate social skills, those who were competent demonstrated a wide assortment of interests. The researchers found that their "results do not support Anthony's early speculation that a child at risk becomes a superphrenic (i.e., gifted and creative) at the cost of maintaining close and satisfying relationships with others" (p 1401).

Under the direction of Lyman C. Wynne, researchers with the University of Rochester Child and Family Study performed a longitudinal examination of children at risk for behavioral pathology in which competence was defined as domain specific (Fisher, 1980; Fisher and Jones, 1980; Fisher, Harder and Kokes, 1980; Harder, Kokes, Fisher, and Strauss, 1980; Kokes, Harder, Fisher, and Strauss, 1980; Fisher, Kokes, Harder, and Jones, 1980). In their conceptualization "all behavior is displayed within the context of a human social system. Consequently, because such behaviors are judged, evaluated and sanctioned positively or negatively by that system, it is the system itself that defines what is competent and what is incompetent behavior" (Fisher, 1980, p 325). The research team saw its task as developing "ways of identifying the norms, values, etc., which exist within the system or setting—those characteristics which define competent behavior and which nurture it through some kind of selective reinforcement or feedback" (Fisher, 1980, p 325).

The Rochester team studied male children, seven and ten years old, of parents with a psychiatric disorder. Their 1987 report (Fisher, Kokes, Cole, Perkins, and Wynne) on protective factors in a sample of 77 children, which included only families in which the mother was the patient, delineated several results. They found, though it was statistically nonsignificant, that children of affectively disordered parents tend to display more competence and higher functioning than not, but children of parents with a psychosis were more competent than children of nonpsychotic parents in their school behavior. Children whose parent's disorder displayed itself more episodically and less frequently demonstrated greater competence than those in which the disorder was prolonged or chronic. Family environmental factors which seemed to promote children's competence included balanced and warm family relationships and a positive relationship with their father (which helped to compensate for negative interactions with the mother).

Summary of Findings

Research into factors protecting children at risk for mental illness has yielded a body of findings that can be grouped according to individual, familial or social characteristics.

An individual's attitudes, beliefs and values appear to lessen the effects of risk. Protective aspects consistently identified by several authors include positive self-regard, high self-esteem, optimism, motivation to perform well and an internal locus of control. Less often cited are commitment to conventional society and positive attitudes toward adults and authority in general. Children's awareness of their needs, abilities and limitations and of the importance of having structure in their lives have been cited as protective, but the findings have not been duplicated across studies. The evidence is scant for Anthony's claim that religious involvement could be protective for children at risk.

Several competencies of children at risk are often claimed to protect against risk: intellectual competence, social competence, impulse control and good information processing skills. Feldman, Stiffman and Jung, however, found that such competence

was not necessarily protective. The difference may arise in part from the enormous variation in definitions of competence that exist in the literature. The ability to plan and pursue some course of action was identified by several researchers as an important protective factor. Coping skills were frequently found to be protective, though it appears that having a set of skills is not enough; coping skills must be used flexibly to meet the challenges which children at risk face. Competence and coping skills incorporate two aspects: an external, interactional component such as the ability to work alone and with others to meet a situation and solve it practically, and an internal component shown in the ability to maintain balance under stress.

There is significant support for two constitutional factors which protect children at risk: being female and having an easy temperament. Rutter's view that genetic characteristics may predispose toward children adapting well deserves further study.

In their study, Werner and Smith found that the integration of traditionally defined masculine and feminine characteristics over time distinguished resilient children at risk. Though there is some logic in this, the finding is not reported by other researchers.

Independence and autonomy are cited by several researchers as important. As children become more independent, they can reduce their reliance on family members and, as Anthony, et al found, put more distance between themselves and the mentally ill parent's disturbed thoughts and behaviors.

The number of risks children face frequently appears in research reports on protective factors. Several researchers have found that being subject to fewer stresses is protective. However, Feldman, Stiffman and Jung argue that it is not the number of stresses which is important but the relative balance between stresses and protective factors, combined with the frequency of stresses, and the child's perception of the stresses that are more important. Rutter's work supports the view that a child's perception of stress is important. Rutter and Feldman, et al, disagree, however, on the timing of occurrence of stress. Rutter argues timing and age of occurrence are important while Feldman, et al, argue they are not.

Characteristics of families which influence the outcomes of children at risk can be grouped in terms of family structure, family interaction and constitutional factors.

The structure of families with a mentally ill parent emerges as a significant factor in much of the research on protective factors. An orderly physical environment, structured use of time, good supervision and effective and balanced discipline have been identified as protective. As shown in Werner and Smith's work, the variables which are protective for girls at risk may vary from those protective for boys at risk. The researchers found that protective factors for girls included the presence of an older person, in addition to the mother, who could provide emotional support; more family members living in the home; and the absence of the father in some situations. Protective factors for boys included the father's presence; low family discord; fewer people living in the home; and greater structure. The number of people living in the household appears in numerous research reports. However, results are unclear. Werner and Smith found that children with behavioral problems who showed improvement benefited from fewer children in the home. Feldman, Stiffman and Jung found that larger family size was protective. They also found that a larger number of disturbed family members increases risk.

Family interaction patterns are an important source of protection, even in families at high risk. Parents who view their children as individuals entitled to self-direction, autonomy and growth serve a protective function. A positive relationship with a parent has been identified as protective across studies. In particular, a positive relationship with the mother was very important. Positive relationships with fathers were important, but not equally so. The relationships with fathers rose in relative importance when the mother was impaired and the father maintained positive links with the child. In general, warm,

harmonious relationships with other family members were also protective.

Numerous "constitutional" factors in families have been found in protective factor research. These variables center on such aspects as parental diagnosis and other characteristics of parents and family members. The research which addresses parental diagnosis is split between identifying which category of mental illness—affective or schizophrenic—is relatively more protective. Whatever the parental diagnosis, it appears that the more episodic, less stable and less frequent the display of the mental illness, the better protected children are. Kauffman, et al, reported that children of mothers who are psychotic are more likely to be resilient if the mothers were better able to take care of themselves, build and maintain social contacts outside the family, and work more efficiently. This latter finding suggests the need to focus on functioning and functional impairment, not categorical diagnosis.

Several researchers' findings point to the protective role of fewer mentally ill members of a household. There are several reasons why this may be true: the overall amount of exposure to psychotic behavior; less opportunities for children to develop positive relationships with mentally healthy family members; and less harmony, warmth and balance within the family setting.

Considerably less attention has been devoted to social and environmental factors which may be protective. One factor which does emerge is the existence of a positive relationship between a child at risk and at least one adult outside the family. However, Rutter has indicated that shallow attachments, the ability to shift rapidly from disrupted relationships to new ones, and avoidance of high demand situations are protective factors. The contradiction between these two sets of factors requires further exploration.

Some institutional characteristics have been studied for their protective potential. Rutter and his colleagues have reported on these the most consistently, though their research has also tended to underplay the importance of institutional protective factors. Rutter found positive school environment and school experiences to be protective though much more research is needed to identify what makes that so. Werner and Smith found the availability of and access to health, education and social services helped children to remain resilient despite the risks they faced. Considering the importance of institutions such as schools in children's lives, it is important that institutions receive greater attention in future protective factor research.

Protective factor research and alcohol and other drug abuse

Connections between protective factors for children at risk for mental illness and those at risk for alcohol and other drug problems might prove a fruitful topic for research. El-Guebaly and Offord (1979), for example, compared some of the literature on children of alcoholics and children of mentally ill parents. They argued for application of some concepts which have arisen from protective factor research on mental health disorders. Greenspan (1985) found similarities and parallels between research on substance abuse and that on the risk for development of psychopathology. Among the areas of convergence he observed were poor impulse control and mechanisms of self-regulation, affective interpersonal relationships, lower school performance, antisocial behavior and defects in the processing and organization of experiences from early childhood. Tartar and his colleagues in their research on children of alcoholics have considered the implications of several factors which also appear related to the risk for development of psychopathology, including difficult temperament (Tartar, et al, 1985; Tartar, 1988), antisocial traits (Tartar, 1988), and information processing abilities (Tartar, et al, 1984). In their review, Hawkins, et al (1985) concluded that the "evidence of a positive relationship between childhood antisocial behavior [including a wide range of delinquent and problem behavior] and subsequent drug abuse is relatively consistent" (p 22).[15]

Robins and Przybeck (1985) considered the relationship of drug abuse and dependence to psychopathology in a report on the Epidemiological Catchment Area (ECA) program funded by the National Institute of Mental Health. The program is designed to investigate the incidence and prevalence of drug abuse/dependence and several major psychiatric disorders in New Haven, Baltimore, St. Louis, North Carolina and Los Angeles. Reporting on the first wave of their studies in the first three of these areas, Robins and Przybeck found that for both men and women drug abuse and dependence were associated with such other disorders as antisocial personality, depression and phobia. A later analysis of the ECA program by Helzer and Przybeck (1988) similarly found the co-morbidity of alcoholism and nonsubstance abuse psychiatric disorders.[16]

Using advances in knowledge about psychopathology to understand factors which might protect against substance abuse must be approached cautiously. Any links which might be made, given present understanding, between what ameliorates the risk that a child will develop mental illness and what will protect against alcohol or other drug abuse can only be tenuous. The domains of behavior are not equivalent and therefore it would be premature, if not simply wrong, to assume that protections against risk were the same. Any conclusions must remain tentative. However, where this body of research may be transferrable, allowing for further knowledge about specific protective factors against the development of substance abuse, both fields will likely gain from the cross-fertilization.

Unfortunately, what distinguishes the state of knowledge about protection from substance abuse is not what can be said about it but what cannot. The field is marked by a notable inattention to such factors. Among the researchers using a risk paradigm, protection against substance abuse is greatly overshadowed by the clamor to identify risk factors. And when protective factors are discussed, it is often with the assumption that they are the opposite of risk factors, hardly a sophisticated analysis, and perhaps even wrong.

It is possible to piece together some outlines of potentially protective factors. Hawkins, et al (1985) in their review of the literature on the etiology of substance abuse found some reports of aspects which appear to guard against use and abuse. Positive relationships, involvement and attachment within families appeared to protect against drug use initiation (although the authors also reported that the quality of family

relationships is inversely related to the use of illicit substances except marijuana, an indication that the research on family variables is not conclusive and that protective factors might be drug-specific).

Baumrind (1985) found from her longitudinal study beginning in 1959 of children of caucasian, middle-class parents in Berkeley, California, that parental features which helped to shield children from use of illicit substances include "traditionality, family intactness, self-awareness, monitoring, and firmness" (p 29). Baumrind also found that marijuana use was positively associated with social competence in boys and girls. This result, if accurate for other populations than those Baumrind studied, complicates the issues in studying protective and risk factors and raises questions about the trade-offs involved in attempting to enhance certain protective factors in one domain of behavior to the detriment of another.

Hawkins, et al (1985) analyzed research which suggested that having an easy temperament may enable children to be more adaptive and positive in their affect and thereby lower the probability of engaging in drug use. It should be noted, though, that the Hawkins group did not extensively report on the temperament literature and this conclusion may be premature.

According to the Hawkins, et al (1985) review, a student's commitment to education may have an inverse relationship to substance use. And to the extent that a youth's social bonds with school and family promote his or her association with peers who do not use drugs or whose values and attitudes are not favorable to substance use, such social bonding may be protective. Other aspects of social bonding identified by Hawkins, et al which may decrease the risk for substance use and abuse are the commitment to conventional societal values and norms and religious involvement. Hawkins and his colleagues found support for some relationship between drug use and competence, as demonstrated by a report that nonusers of substances scored higher than users on measures of personal competence and social responsibility.

Another literature review, prepared by Macro Systems, Inc. (1986), examined research related to alcohol use by children age eight to twelve years. Equating protective factors with prevention, the review covered some of the same ground as Hawkins, et al (1985), but delineated factors in three categories. Parental factors seen as protective included "parental disapproval of alcohol use by youth, setting clear expectations for nonuse, and ... strong family relationships and social competencies" (p 12). Peer factors included accurate perceptions of the extent of use by peers, abilities to resist social pressures to use, improved self image, and enhanced coping abilities. Environmental factors included reductions in youth's availability and accessibility to alcohol and the ability to examine advertising for alcohol critically.

The Macro Systems review also addressed such areas as school policies, curricula and programs, alcohol-related laws and the development of parents groups. In this regard its content raises troubling questions within protective factor research: How does one define what is protective so that it does not become a grab bag of ideas of what some think should be done to prevent the development of substance abuse? What guideposts can be established for distinguishing between empirically identified factors which on their own protect children at risk for substance abuse and those which in fact are interventions, perhaps based on empirical knowledge, but nonetheless reflective of specific political interests? Interventions may serve a protective role, but it is fallacious to presume this to be the case. Distinctions should be made between factors which are protective without intervention and those which are intervention specific.

Vaillant and Milovsky (1982) and Vaillant (1983) reported on the effects of several variables on a range of adult outcomes including sociopathy, social class, social competence, mental health and alcoholism. Among the variables they considered in a longitudinal study of 456 white, male, urban, inner city youths (referred to as the Core City sample) followed for over forty years from early

adolescence were boyhood competence and childhood environmental strengths. Boyhood competence was a construct based on Erikson's fourth stage of development during which children grapple with "industry versus inferiority." The boyhood strengths measured in the Core City sample were "regular part-time job, regular household chores, participation in extracurricular clubs or sports, school grades relative to I.Q., regular school participation in activities, and coping capacity—the ability to plan, to make the best of the environment" (Vaillant, 1983, p 255). The childhood environmental strengths scale attempted to measure both the absence of childhood physical, social and mental health problems and the presence of positive attributes at home and in relationships with parents.

The results of the study appear inconclusive. In one instance, Vaillant (1983) reported that boyhood competence was positively related to adult social competence, social class and mental health and negatively correlated to sociopathy, percent of adult life spent unemployed and alcohol abuse or dependence (as defined by DSM-III). Childhood environmental strengths were positively related to adult social class and mental health and negatively related to sociopathy, percent of adult life spent unemployed and alcohol problems (p 55). Later in the same volume, Vaillant reported results of a multiple regression analysis of correlations between premorbid variables and sociopathy and problem drinking (as measured by Vaillant's own problem drinking scale). Boyhood competence and childhood environmental strengths were not strongly correlated or predictive (p 88).[17]

It may be useful to distinguish between factors which may protect children who decide to take risks by using drugs and factors which protect children who are distinctly at risk due to biopsychosocial characteristics over which they have little or no control. The best example of the latter would presumably be children of alcoholics or other drug users. However, even here the status of protective factor research is not very advanced.

Russell, Henderson and Blume (1985) prepared a comprehensive literature review for the Children of Alcoholics Foundation. Mention of children who are resilient despite growing up in alcoholic families was brief, followed immediately by a reference to Claudia Black's contention that "the roles and skills adopted by children of alcoholics may appear functional at the time, but in actuality serve only to cover up problems which may emerge in adulthood when previously adaptive roles are no longer sufficient" (p 50). This is an unfortunate conjunction given the significant gaps in studying the resiliency of children of alcoholics. Though perhaps unintended, the effect in part is to dismiss an important and possibly fruitful area of study.

A review prepared by the National Center for Alcohol Education for the National Institute on Alcohol Abuse and Alcoholism (1977) on the literature related to alcohol use found several characteristics among families in which drinking problems are rare. In such families, parents who drink present a consistent responsible example of moderation, without lecturing or preaching. Standards for drinking or not drinking alcohol are well established, understood and agreed upon by all in the family. Excessive drinking is not acceptable to the family. Overindulgence or drunkenness is not looked upon as comical, even though family members recognize that people sometimes do bizarre things when under the influence. Parents consider drinking to be morally neutral, neither virtuous nor evil. Drinking is not viewed as an escape, as proof of adult status, or as manly or "chic." Drinking is not carried on for its own sake, but is a part of other activities. No pressure is placed on a family member or a guest to drink. No social significance is attached to a person's choosing not to drink. In nondrinking families, negative references are not made about others in the community who choose to drink.

Occasionally, findings about protective factors do show up in the literature on children of substance abusers. One example is the report by Obuchowska (1974) that in families in which the father is an alcoholic,

positive emotional contact between the child and mother served to protect the child against negative influences of the father.

Last, the later work of Werner (1986) is instructive in searching for possible protective factors related to those at risk for alcohol and other drug abuse. In an analysis of 49 children of alcoholics who were part of her Kauai study, Werner noted that those offspring who were resilient were more often female, with less serious illness and handicapping conditions in adolescence. They more often had fathers rather than mothers who were alcoholic, mothers who delayed pregnancy and/or birth of subsequent children for at least twenty months from the birth of the child studied, and mothers who worked steadily and gainfully from the start of the children's early childhood. Resilient children grew up in homes where family conflict did not appear in the child's infancy. During their first year, the children received significant care and attention from primary care takers. Resilient children's family relationships were more cohesive and positive, as marked by the parents not being separated or divorced by the time the children became teenagers and by a smaller proportion of problems between the child and either parent.

Werner discovered that children of alcoholics who were resilient at eighteen years old were perceived by their primary caretakers as having positive temperaments during infancy. The children had average or above intellectual development as measured by pediatricians at two years of age. During the twelfth grade, the resilient children of alcoholics compared to the nonresilient children saw themselves as being in better health and appeared to others as "more responsible, more socialized and caring; they projected a greater degree of self-control and tolerance of individual differences; and they were more achievement oriented" (Werner, 1986, p 37). They also had an internal locus of control and higher self-esteem.

Attempting to determine predictors of the resilient children of alcoholics, Werner (1986) discovered several features which were different for boys than for girls. For boys important predictors of resilience/nonresilience were psychologists' rating of the toddler's socioemotional status at age two and prolonged separation from the primary caretaker at one year old. For girls important predictors were the perception by the primary caretaker of the baby as cuddly and affectionate at one year old, scores on the PMA IQ examination at ten years old, and STEP (Sequential Tests of Educational Progress) writing scores at grade five. For both boys and girls, ratings of self-esteem and results of STEP reading scores enabled prediction of resilient children at age eighteen.

Werner concluded that "it was not solely the risk of parental alcoholism, but the balance between that risk factor, the accumulation of stressful life events and protective factors within the child and his caregiving environment that accounted for the range of adaptive and maladaptive outcomes observed among the offspring of alcoholics" (1986, p 39).

In summary, several factors are strongly identified in the literature as protective against the development of alcohol or other drug abuse. On an individual level positive self-esteem, an internal locus of control, personal and social competence, effective coping skills and independence and autonomy are important protective factors. Youths' commitment to conventional societal norms about use of alcohol and other drugs, positive social bonding with institutions and the family, and accurate perception of peers' use of alcohol and other drugs help to protect those at risk. Family characteristics which serve a protective function include effective family management skills, greater family cohesion and intactness, and emotional support for children. Positive bonds between youths and their mothers are particularly notable as a protective factor. Clearly defined, communicated and enforced family norms regarding use of alcohol and other drugs play a strong role. Parental disapproval of children's use of alcohol and other drugs, especially when the parenting style is authoritative rather than authoritarian, is a significant protective factor.

Protective factors: Issues and concerns

Protective factor research has advanced in several ways since it first became the focus of a handful of mental health researchers in the early 1970s. Both in the interest it has generated and the understanding it has begun to provide, this endeavor holds promise for bringing a much needed balance to common conceptions of the risk paradigm. Several issues, though, should be considered with regard to the present status of this research. These can generally be ordered around the categories of definition, methodology, interpretation and intervention. At a basic level is concern over definitions. Seifer and Sameroff (1987) discuss the critical problem of defining the meaning and parameters of risk (with which protective factors are intertwined). They argue that no criterion currently exists for distinguishing between risk and what might be otherwise seen as constraints on development. They indicate that what researchers choose as risk factors are "informed, but arbitrary, choices in this matter" (p 64).

> Defining 'risk' might be a trivial matter, except for the fact that what determines vulnerability or invulnerability is dependent upon the initial determination of risk ... One could assume that any factor shown to affect child outcome adversely should be considered a risk factor. But then there would be no possibility of finding a set of measures that consistently differentiate vulnerables from invulnerables, since anything that differentiates children with good outcomes from those with poor outcomes would be considered a risk factor. At the other extreme, one might rigidly restrict the conception of risk factors to a small set of measures ... However, we consider this form of analysis relatively uninformative, since it fails to account for variables at different levels of individual, family, or societal organization as potential risk factors ... In sum, to accomplish the goal of identifying factors that protect at-risk children from poor outcome, it is necessary to define the meaning of "risk" somewhere between two extremes. (p 65)

Fisher (1980) noted the problem in defining and using the terms competence and incompetence, a concern followed in a later report by Fisher and his colleagues (1987) and echoed by Seifer and Sameroff (1987). And Feldman, Stiffman and Jung (1987) have pointed to the confusion created over the use and meaning of such terms as "invulnerable," "invincible," "superkids," and "superphrenics." Add to that list Anthony's (1987a) latest contributions: "hypervulnerables," "pseudoinvulnerables," and "nonvulnerables" (p 27).

Another area of concern involves methodology. Fisher, et al (1987), listed three issues. First, they saw problems with control groups in research on invulnerable children. Not only were controls lacking in a number of studies, but many types of controls could be established. Why comparisons should be made between competent and incompetent children and not between children who varied by type of risk, age of exposure or environmental circumstances of exposure should be scrutinized. Second, they emphasized the importance of the timing of assessment, following Anthony's suggestion that invulnerable children at risk should be assessed as they passed through important developmental stages. Third, they questioned the ability to apply results from samples of children at risk to others in the population.

A number of researchers have addressed the need to move beyond simply examining functional variables, a point about which Greenspan (1985) correctly chided substance abuse risk research. This need has been variously noted as the importance of considering the interactions of variables and the mechanisms of transmission and continuity as suggested by Rutter (1974), Sroufe and Rutter (1984), Rutter (1985) and

Quinton and Rutter (1988); the transactional nature of protection and risk as put forth by Seifer and Sameroff (1987); the balance between the two realms of risk and protection as encouraged by Werner and Smith (1982) and Werner (1986); and the balance between net environmental strengths/weaknesses and personal coping skills as discussed by Feldman, Stiffman and Jung (1987).

Garmezy, Masten and Tellegen (1984) stressed the need to integrate findings from protective factor research back into theory and research design examining developmental psychopathology. In their vision, a "new generation of studies will aim at comparisons implicating risk, protective, and competence factors in different cohorts of children: the already disordered, those at risk for behavioral pathology, and the adaptive ones who emerge from adverse as well as more advantaged backgrounds" (1984, p 109).

One interest driving a good deal of protective and risk factor research is the use of longitudinal rather than cross-sectional study designs. However, longitudinal designs should not be the only method used to unravel the mystery of risk and protection. As Rutter (1981a) argued, longitudinal designs are not without fault. To claim that such designs eliminate the errors of retrospective recall "is a rather misleading half-truth" (p 335) since even though longitudinal designs collect data on a sample population across a minimum of two points in time, quite frequently the collection of the data is nonetheless retrospective. And although longitudinal designs measure change in a given sample, they cannot account for historical and cultural shift as cross-sectional designs can. For Rutter "both repeated cross-sectional and longitudinal data are needed to study development. Only in this way can developmental alterations and secular shifts be distinguished" (1981a, p 335).

Clearly related to the problem of definitions is the interpretation of results. There is a tendency to see risk and protection as two aspects in some type of zero-sum game. Benard (1987), for example, reviewed protective factor research and created a table listing risk factors identified in one column and protective factors in another. Two implications could be drawn from this effort. First, there is a one-to-one correspondence between risk and protection. Second, the outcome for children at risk follows an additive model—those with negative outcomes have more risk factors than those with positive outcomes (or conversely, those with positive outcomes have more protections than those with negative outcomes). Though such an effort may serve the interests of categorization, it is probably misleading. The complex interrelationships between risk and protection are unlikely to fit into such well constructed lists.

The need to avoid this kind of approach is underscored by Quinton and Rutter (1988) and Rutter (1985) who argued against an additive model. Spring and Zubin (1977) lent weight to this position in their criticism of equating competence with invulnerability, stating that "competence or coping ability is orthogonal to vulnerability. Thus, highly competent individuals can have all grades of vulnerability, and relatively incompetent folk can be highly vulnerable or quite immune to mental illness" (p 269). Felsman and Vaillant (1987) also cautioned against simple equations of vulnerability with weakness and invulnerability with strength.

There is insufficient discussion within protective factor research on the question of whether factors identified are correlates or predictors. It would be incorrect to assume that any factor found is necessarily protective, until it can be shown or strongly deduced that the factor is not an artifact which happens to appear in study results. The distinction between those factors which co-vary with and those which predict resilience deserves further consideration.

A final area requiring further exploration is that of intervention based on the knowledge derived from the studies reported. An outcome of risk and protective factor research is the hope of finding new methods of intervening so as to lower risk, enhance protection, or both. This effort is warranted. However, it is incumbent upon those who would establish policies and

programs of intervention to consider in advance and throughout the life of such interventions the side effects arising therefrom. Felner, et al (1985) discussed this concern in one intervention context and concluded that "in our efforts to modify environmental systems to reduce the vulnerability of high-risk individuals in one area of functioning, we may impede, albeit unintentionally, the individual's adaptive efforts in another sphere" (p 377).

Quinton and Rutter (1988) argued that resilience was not to be found in the "avoidance of stress, but rather in encountering stress at a time and in a way that allows self-confidence and social competence to increase through mastery and appropriate responsibility" (p 13). The point gains strong support from Wildavsky's (1988) work examining the social, cultural and political construction of risk in modern industrial society.

Such findings and cautions are important for, in the rush to find effective interventions to such issues as substance abuse among high risk youth, policies and programs must avoid giving new meaning to the old concept of "learned helplessness." Consistently emerging from the literature on protective factors is the recognition of balance between risk and protection. It is therefore important that interventions not promote overprotection or result in a lack of risk and stress which are critical to human growth and functioning.[18]

Programs and policies to enhance protective factors

Many programs now exist to reduce the risk of alcohol and other drug abuse by youth. Few have been extensively evaluated or tested to determine their effectiveness. Some programs are quite specific to alcohol and other drug abuse. Other programs take a broader approach, addressing factors which appear to underlie one or more problem areas (e.g. delinquency, school dropout, child abuse). Although the emphasis in most of these has been to reduce risk, several programs do this by attempting to enhance factors which the current review has identified as protective for youth at risk. This section will highlight some programs which appear to hold particular promise in promoting those protective factors consistently identified across studies.

Competence and Life Skills Training

Much of the protective factor research points to the value of personal and social competence in overcoming risk. Therefore, programs and policies should aim to improve competence (including intellectual competence, impulse control, information processing skills, and ability to plan and pursue a course of action) and further the abilities of youth to solve problems and interact with family, peers, and acquaintances in socially acceptable ways. Many alcohol and other drug abuse prevention curricula employ a variety of methods to enhance personal and social competencies, most often in combination with other strategies.

In a recent review, Hawkins et al (1987) outlined several programs designed to promote competence and life skills of youth. These programs, intended for use in schools, are designed to increase prosocial behaviors or decrease problem behaviors. For example, the cognitive interpersonal skills training program developed by Spivack and Shure is directed at kindergarten and first grade students. Teachers help children learn methods of generating alternative solutions to problems, the relationships between means and ends, and ways to become sensitive to interpersonal problems. The program has been adapted for 4th- and 5th-grade students. However, evaluations of the program have not included control groups, thereby lessening conclusions which can be drawn about the program's effectiveness.

The Interpersonal Problem Solving Skills Training and the Behavioral Social Skills Training developed by Michelson et al (cited in Hawkins, et al, 1987) target children at high risk in 4th-and 5th-grades. The 60-session staff-delivered program trains students in both cognitive and behavioral problem solving and interpersonal skills, helping them to acquire empathy, assertiveness, the ability to resist peer pressure, methods for controlling impulsive behaviors, and techniques for achieving better relationships at home and in school. Hawkins, et al (1987) found that the approach of combining cognitive and behavioral interventions, as done in these two programs, to be effective in reducing antisocial behavior.

Botvin has developed a prevention program called Life Skills Training which attempts to enhance both generic personal and social skills and those which allow youth to cope with the social influences that promote the use of alcohol and other drugs (Botvin, 1983; Botvin and Wills, 1985). The program has been used with children in grades seven through ten and has three components. The substance-specific component provides information on substance use and abuse, social pressures to use, and techniques for resisting pressures to use. The personal skills component builds participants' ability to think critically, control anxiety and make responsible decisions. It includes information on the principles of behavior

change and methods of self improvement. The social skills component works to improve interpersonal skills such as communication, assertiveness, and those appropriate to the development of male/female relationships.

Botvin's Life Skills Training program has shown encouraging results, notably in reducing some substance use behaviors. The program has been effective in lowering the number of new tobacco smokers, especially if follow-up booster sessions are given. The strategy is also being tested to show its effects on the use of alcohol and marijuana use (Botvin and Wills, 1985).

Rhodes and Jason (1988) reviewed social skills training programs. In addition to those cited above, they found two other promising programs. The Student Taught Awareness and Resistance (STAR) program developed by Pentz, et al, uses trained teachers and peer leaders to conduct sessions which combine cognitive and behavioral components. Students are taught about drugs, their effects and consequences of their use; methods to resist peer pressure and to change norms to non-use; and how to identify adult and societal influences which promote use of drugs. The program has been effective in improving social competence and school grades, especially when it occurs prior to major school transitions such as the entry into junior high or high school (Rhodes and Jason, p 25).

Another program reviewed favorably both by Rhodes and Jason (1988) and Botvin and Wills (1985) is the cognitive and behavioral skills training program developed by Schinke and Gilchrist. The program grew out of Schinke and Gilchrist's research in pregnancy prevention and has been applied to an array of problem behaviors. The program provides accurate, relevant information that participants can easily personalize, teaches problem solving, coping and self control skills applicable to a variety of problems, and helps to develop assertiveness. Rhodes and Jason argue that this approach has been demonstrated to be effective not only at preventing substance abuse, but also at enhancing overall problem solving, decision making and assertiveness abilities.

A program with promise for building and enhancing some competencies in youth is Project SMART (Self Management And Resistance Training) developed at the Institute for Health Promotion and Disease Prevention Research at the University of Southern California (Hansen, 1988; Hansen, Graham, Johnson, Flay, and Pentz, 1988; Hansen, Johnson, Flay, Graham, and Sobel, 1988). Project SMART operates from a social influence model which emphasizes intervening with youth on external factors—such as resisting peer pressure, changing normative expectations, being critical of images in the mass media, and resisting parental and other adult influences which might promote use of alcohol and other drugs—rather than internal ones—by building self esteem, improving stress management abilities, clarifying values, improving decision making and goal setting skills—as typically found in affective education approaches (Hansen, Johnson, et al., 1988). The Project SMART curriculum contains fifteen sessions designed to teach resistance skills to students. Program participants learn about methods to resist pressures to use alcohol and other drugs, observe role models demonstrating the skills, and are provided opportunities to practice the skills themselves. Project SMART uses peer leaders in much of the program to enhance its success. A recent evaluation (Hansen, Johnson, et al. 1988) showed that in comparison to an affective education program, Project SMART was effective in delaying the onset of use of alcohol, tobacco, and marijuana by seventh graders.

To the extent that they promote protective factors which exist primarily in the individual's external environment, Project SMART and others based on the social influence model should be considered. However, they are limited in the task of promoting protective factors, since they tend to exclude many of the very aspects (those classified as affective) which have been found through research to be protective.

Although personal and social competence approaches appear to hold some promise for

enhancing protective factors, they are limited in their ability to produce significant, long-term results. DeMarsh and Kumpfer (1985) cite several shortcomings of competence-building approaches: they have been used primarily with white, middle-class audiences in grades six through nine; although some evaluations of effectiveness have been performed, there have been only limited longitudinal studies of effectiveness to determine whether the programs are having impacts beyond their intermediate goals; and the programs have been applied to drugs such as tobacco, and to a lesser degree alcohol and marijuana, but have been utilized very little in trying to prevent abuse of other drugs such as narcotics or opiates or polydrug use. DeMarsh and Kumpfer suggest that family-based approaches should be used more extensively in preventing alcohol and other drug abuse among children at risk.

Family Enhancement Programs

Protective factor research demonstrates that even in families where the risk to children is increased due to parental mental illness or substance abuse, there are attributes and interaction patterns which can lessen the effect of that risk. Specific factors shown to be protective for children at risk include positive family interaction marked by warmth and harmony; effective parenting styles using clear and consistent expectations for behavior, rather than extremely permissive or authoritarian methods; a positive relationship with at least one parent, especially the mother; and parents' allowing their children autonomy and self-direction. Prevention programs can promote the positive functioning of children at risk by developing methods to enhance these areas.

To be effective, family-based prevention must use a variety of approaches to address specific factors in ways that are relevant to the individuals receiving it. Fortunately, several types of programs do exist. DeMarsh and Kumpfer (1985) reviewed prevention programs that use family approaches. They found two types of programs: parent training versus family training. Within each of these categories, programs could be generally grouped into behavioral, affective, or cognitive/communication approaches.

Behavioral parent training programs strongly emphasize observable behaviors. Based on social learning theory, these approaches "teach parents appropriate ways of dealing with their children's problem behaviors and ways of increasing positive parental interactions with their children. The parents learn to target problem behaviors, ignore inappropriate behaviors and reward appropriate behaviors" (DeMarsh and Kumpfer, 1985, p 127). These behavioral programs are usually conducted by facilitators in group settings.

DeMarsh and Kumpfer's (1985) Strengthening Family Program contains a parent training component that is designed to be used with parents who currently abuse opiates, narcotics or who are engaged in polydrug abuse. The program lasts fourteen sessions, the first ten devoted to didactic learning and the remaining four to parents' designing and implementing "a complete behavioral program with their child" (p 128). The model uses a structured curriculum containing one manual for trainers, another for parents, as well as videotapes and films and homework assignments.

DeMarsh and Kumpfer (1985) also discuss the Confident Parenting program developed by Alvy in Los Angeles. Developed for black parents, Confident Parenting lasts fifteen sessions, incorporates culturally appropriate materials, and addresses topics pertinent to black parents such as "Pride in Blackness" and "Traditional Black Discipline vs. Modern Black Self-Disciplining" (p 129).

DeMarsh and Kumpfer (1985) reviewed two affective parent training programs, one by Briggs designed as a how-to publication to help parents develop self esteem in their

children and another by Guerney aimed at training foster parents. Briggs' program[19] operates from the assumption that self esteem is not a function of such variables as wealth, education, class, parents' occupations, etc., but of the relationships between children and significant others in their lives. The program teaches parents about children's self esteem—how it develops, its effects on behavior, and how parents can enhance it. DeMarsh and Kumpfer have incorporated some of the Briggs' model into their Strengthening Families Program. The Guerney Foster Parent Training Program relies upon a ten session structured curriculum with lectures, films, discussions and homework to assist foster parents in improving children's self esteem.

Some programs are designed to enhance family communication and problem solving. Among the examples cited by DeMarsh and Kumpfer (1985) of this type of preventive intervention is Gordon's Parent Effectiveness Training (P.E.T.). The program involves 24 hours of instruction in groups of six to fifteen parents. The instruction uses a variety of techniques and has been found to increase parents' confidence, self esteem, acceptance and understanding of their children and to have improved parental attitudes and behaviors in child rearing. Another program, the Systematic Training for Effective Parenting (STEP) developed by Dinkmeyer and McKay involves parents in two hour weekly sessions for up to twelve weeks. Through the program, parents learn skills to interact with their children and to understand the purpose behind the behaviors of children and other family members.

Family skills training programs differ from parent training programs, according to DeMarsh and Kumpfer (1985), in that they involve the family as a unit. They can also be characterized as behavioral, affective, or cognitive/communication oriented programs. The Kumpfer/DeMarsh Strengthening Families Program is an example of a behavioral program. During the fourteen sessions, parents attend a parenting class the first hour while children attend a class in social skills training. During the second hour, parents and children come together as a family unit and meet with an individual trainer to practice what they've learned. The family skills training component has three phases. The first assists parents to "develop empathy and learn to enjoy their children ... [and] helps children to express and act out their feelings, a deficit often found in children living with chemically dependent parents" (p 134-35). The second phase focuses on training families in communication skills. The third phase provides the opportunity for parents to learn how to set controls and restrictions on children's behavior, with the trainer always present in order to model, advise, correct, and reward behaviors for the parents.

The one affective family skills training program recommended by DeMarsh and Kumpfer (1985) is the Guerney Filial Therapy Program, a program initially designed to help families with children who are emotionally disturbed. The program lasts twelve to eighteen months. Parents are trained in groups of six to eight for ten weeks and then are supervised in play sessions and problem solving in the home.

DeMarsh and Kumpfer (1985) found several cognitive/communication family skills training programs worth reviewing. These programs work with the family unit to understand the process of communication within the family, examine patterns and gain new skills. Among the programs of this nature are Guerney's Relationship Enhancement Program, the L'Abate Structure Enrichment Program, the Streit Family Communication Workshop, the Understanding Us Program developed by Carnes, and Szapocznik's Family Effectiveness Training Program. While the first four have been used primarily with white, middle class families with higher levels of education, Szapocznik's program was designed for Cuban American families at high risk. In addition to developing skills, educating about drugs, and addressing family problems, the program also contains culturally relevant material on family conflict, the stresses of acculturation, and other topics.

Bavolek's (1984) Nurturing Program developed out of a two year study to

determine the effects of parental abuse on children's growth. The program can be used with the author's Adult-Adolescent Parenting Inventory which measures inappropriate parental expectations of children, parents' awareness of children's needs, belief in the value of corporal punishment, and role reversal within the family. The Nurturing Program is based on the assumptions that the family is a system and change efforts must be directed at all members, that adults and children learn on both cognitive and affective levels to which intervention must correspond, and that parenting practices fall on a continuum with all families having some healthy as well as unhealthy practices. The program uses brochures, games, coloring books, and audio-visual materials. Versions of the program have been developed for use in parents' homes or in groups and for different audiences, including parents with their adolescents, foster families, parents with developmental disabilities, and teenage parents.

In addition to formal programs, low cost resources exist which can be used by families themselves in such a manner as to fit their own needs. One such resource, developed and extensively tested by Day, Small and Fitzsimmons (1987) at the University of Wisconsin-Extension, is the workbook *Family Times* designed to strengthen family communication, decision making, caring and affirmation, community and family ties, and pride and loyalty. The workbook and accompanying instructional video provide numerous suggestions for activities in which families can participate as a whole. Each activity description explains why the activity can help the family, what materials are needed, the time necessary to complete the activity, and explicit instructions on the tasks involved. A workbook by Delaine (1986) entitled *Who's Raising the Family* focuses on developing children's positive self-concept, ability to express feelings, assertiveness, and decision-making and problem-solving abilities, along with enhancing parenting methods, family communication, coping abilities, and developing alternatives to the use of alcohol and other drugs.

The family activity book *Preparing for the Drug Free Years* written by Developmental Research and Programs, Inc. and Roberts, Fitzmahan and Associates (1988) is another example of resources which families can use by themselves in their homes.[20] The workbook provides information on alcohol and other drugs and risk factors associated with their use; methods for developing family guidelines regarding drug use; ideas on skills for refusing alcohol and other drugs; ways to manage family conflict and constructively express anger; techniques for enhancing bonds within the family; and suggestions on how to organize a parent support group. The workbook also contains tear-out "family grams" covering relevant sections in the book. The family grams can be completed, removed from the book and placed around the house so all family members can easily see, for example, the guidelines to which they have agreed, the activities which they might do together, or the methods they can use to refuse alcohol or other drugs.

Social and Environmental Interventions

Beyond the need to strengthen individual abilities and family life, some protective factor and prevention research indicates the importance of prevention on a larger social level. For example, Rutter (1981b) has considered how characteristics of schools may be protective or not and Werner and Smith studied the relationship between the availability and accessibility of community resources in protecting against the negative effects of families at risk. Unfortunately, social and environmental factors have not been studied as widely as individual and family ones. Thus, conclusions regarding this area must be tentative.

Broader intervention can be valuable, however. One specific protective factor which has emerged from the mental health literature is the existence of a positive relationship between a child at risk and at least one adult outside the family. This type of relationship can provide a means of reducing the child's immersion with the disturbed thought processes of mentally ill family members, provide a respite from conflict within the family, and serve to model behaviors which the child can use to meet challenges in his or her life. Relationships of this sort can be informal and naturally occurring as in the case of family friends who devote time to a child at risk. They also may occur more formally through institutions important to the child. A teacher, counselor, clergy or other religious leader, or volunteer in a community organization such as scouts, for example, may develop close bonds with such children. An even more formal and proactive means by which such relationships can develop is through programs such as Big Brothers and Big Sisters, whose purpose is to match an individual child with an adult of the same gender outside the family, and Citizen Advocacy programs which perform a somewhat similar service for people with developmental disabilities.

One intervention which holds promise for children at risk is early childhood education, of which the Perry Preschool Program conducted in Ypsilanti, Michigan, is perhaps the best example for which evaluative research is available (Berrueta-Clement, et al, 1984). The program studied 123 black children whose families were low-income and who were at risk for school failure. When they were three and four years old, the children were randomly assigned to an experimental group which received preschool education or a control group which did not. The study followed the children until they were nineteen years old. They were examined annually between three and eleven years of age and then at fourteen, fifteen and nineteen years. In addition to the children's scholastic achievements, attitudes, and personal and social skills, the Perry Preschool Program studied the children's involvement in delinquent acts, their employment history, and their use of economic assistance.

The researchers found significant effects for the children who received the preschool education compared to those who did not. Those who attended preschool performed better throughout their later school careers, had fewer absences, used special education less, were more committed to their education, were less likely to drop out of high school, and were more likely to continue on with their education after high school. Preschool attendees were better off economically in the latter part of the study, having higher rates of employment and higher earnings. They showed greater social responsibility "as indicated by fewer arrests, fewer cases sent on to juvenile court, fewer months on probation, and fewer persons fined as adults. Fewer pregnancies and births through age 19 were reported by females in the study's preschool group" (Berrueta-Clement, et al, 1984, p 61).

Attempting to determine what the ingredients were for successful early childhood programs, Berrueta-Clement, et al (1984) in their report on the Perry Preschool Program compared their results with those of six other early childhood education studies. The six studies were Early Training (Murfreesboro, Tennessee), Mother-Child Home (Long Island, New York), the Harlem study (New York City), Rome Head Start (Rome, Georgia), the Milwaukee study (Milwaukee, Wisconsin), and New York Pre-K (New York state). They found that neither program duration nor comprehensiveness were essential for a program to be effective. Parent involvement was important. Specific curriculum content was not as important as the style and quality of operation of a program and the existence of competent leadership.[21]

Children at risk are greatly affected by important institutions in their lives such as schools and human services programs. It is important, therefore, to consider ways to improve those institutions' abilities to respond to at risk populations and to extend the concept of prevention programs to encompass further the context and environment in which children live.

In their recent book, *Within Our Reach: Breaking the Cycle of Disadvantage*, Schorr and Schorr (1988) reviewed the work of researchers who have examined the characteristics of effective schools. Crucial variables include:

- an emphasis on academics; classroom management that maximizes academic learning time; routines that discourage disorder and disruptions;
- a safe, orderly, disciplined—but not rigid—school environment;
- a principal who exercises vigorous instructional leadership; makes clear, consistent, and fair decisions; has a vision of what a good school is and systematically strives to bring that vision to life; and visibly and actively supports a climate of learning and achievement;
- teachers with high expectations that all their students can and will learn; collegiality among teachers in support of student achievement;
- regular and frequent review of student progress; modification of instructional practices in light of information about student progress; public ceremonies honoring student achievement;
- agreement among principals, teachers, students, and parents on the goals, methods, and content of schooling; the belief that each student is capable of making academic progress; and recognition of the importance of a coherent curriculum, of promoting a sense of school tradition and pride, and of protecting school time of learning (Schorr and Schorr, 1988, p 227).

Schorr and Schorr (1988) also reviewed the characteristics of successful community programs which work for children at risk. These include: flexibility in program structure and by individual staff members; seeing the child as part of a family system and the family as part of the community and society; staff who are competent, committed to their work, who care about the people whom they serve, are trusted by their clients, and who are able to change their roles to meet the needs of their clients; services that are available, accessible, "easy to use," and that maintain continuity with clients, especially through major transition periods; and the ability to transcend traditional boundaries defined by professionals and bureaucracies so that programs serve the needs of clients rather than the reverse. On this last point, the authors conclude that there is "a fundamental contradiction between the needs of vulnerable children and families and the traditional requirements of professionalism and bureaucracy ... This contradiction helps to explain why programs that work for populations at risk are so rare, while less effective programs are so much more common" (Schorr and Schorr, 1988, p 259).

Wallack (1985) has also examined the context and environment in which prevention occurs. He believes that many prevention programs try to understand behaviors by removing such behaviors from the context in which they occur.

> This program approach to prevention is popular for many reasons but mostly because it benefits all parties involved, except the person with the problem (Caplan & Nelson, 1973). The research process uncovers a deficiency that is thought to explain a behavior. The deficiency is recast as a need that is congruent with the assumptions and skills of bureaucrats, planners, program developers and researchers. Bureaucrats are satisfied, as are politicians, because these programs usually satisfy a desire to "do something" while remaining safe, but they do little to alter existing arrangements. Educators and other program interventionists can develop programs that fit the needs uncovered as perceived by the researchers. This usually entails providing more of something such as communication skills, self-esteem or sometimes just knowledge. Some researchers can evaluate the outcome of these programs, while others can seek greater and greater precision

> regarding the relevant factors and perhaps find new factors internal to the individual that are more strongly correlated with the problem behavior. The tobacco industry, pharmaceutical drug industry, or alcohol industry are pleased because the problem has been placed on the individual and the product from which the industry derives their profits has been excluded from the problem definition ... The narrow definition of the problem leads to narrow, limited solutions. (pp 159-160)

In contrast, Wallack (1985) suggests several principles which will allow for integrated, comprehensive prevention. First, problems should not be reduced to the level of individual behaviors. Second, responsibility for addressing the problems should be shared proportionately by the various segments of the community. Third, long-range planning should complement short- and medium-range approaches and prevention programs should be institutionalized as part of existing community resources. Fourth, education and skill building alone are insufficient. More systemic interventions should be considered such as the use, for example, of higher excise taxes to reduce consumption of alcohol and tobacco. Fifth, more comprehensiveness does not mean simply more of the same programs which are often quite limited to intervention with individuals, but more balanced approaches which "include attention to variables such as social status and underlying social inequalities that are often 'controlled for' or ignored because they tend to blur rather that [*sic*] clarify the process" (p 165).

Wallack (1985) has used these principles to guide his suggestions for three strategies for changing the community and social environment through the use of the mass media. One approach is *cooperative consultation* which targets writers, producers and directors in an attempt to improve the portrayals of alcohol and other drugs. This strategy seeks to change messages in the media—television, radio, newspapers, comic books, etc.—by analyzing the content of the media messages, educating media industry personnel generally, educating specific industry personnel, and finally getting feedback from the industry so as to improve future consultation efforts.

A second approach is *advertising activism*. Wallack (1985) argues again for the importance of content analysis of advertisements, in this case so as to bring rationality to the debate which should occur. He sees the need for future study of the effect of advertising on the individual health behaviors of children. And, he supports the role of parents, educators and others in "questioning the practice of advertising as it relates to children" (p 174).

This particular strategy is reflected in actions such as those of a recent Wisconsin task force on alcohol and other drug abuse among youth, which recommended that the state create a council consisting of representatives of the media, the alcohol beverage industry, the state departments of public instruction; health and social services; agriculture; transportation; industry, labor and human relations; and the secretary of state's office. The council would "develop specific guidelines on beverage alcohol advertising and promotion to discontinue youth targeted and fallacious advertising that perpetuates myths and promotes abuse" (Wisconsin Youth Alcohol and Other Drug Abuse Task Force, 1988, p 36).

It must be pointed out, however, that—in the words of a recent report to congress—the "research association between exposure to advertising of alcoholic beverages and consumption of alcohol by teenagers is inconclusive ... The arguments on both sides of this issue may have merit, but there is little definitive empirical evidence to settle the question" (National Institute on Alcohol Abuse and Alcoholism, 1987, p 100-101).

A third strategy is the use of *mass media campaigns* which supplement community programs. Wallack (1985) believes that such campaigns can be useful, but are unlikely to have much effect on their own. The use of mass media campaigns to supplement other prevention efforts within communities has been successful with other health education

efforts, notably cardiovascular disease prevention. The Stanford Heart Disease Prevention Project demonstrated that people exposed to a mass media campaign in conjunction with in-home counseling and instruction lowered their risk for cardiovascular disease risk more and sustained the lowered risk longer than those in a group exposed only to mass media education and those in a control group (Farquhar, Magnus and Maccoby, 1981, cited in National Institute on Alcohol Abuse and Alcoholism, 1987).

According to Wallack (1985), mass media educational campaigns should follow the principles of social marketing; they should deliver the right product at the right price in the right market with the right promotion. One model Wallack discussed is the Communication-Behavior Change (CBC) model, developed by Farquhar, Maccoby and Solomon. The CBC model contains five components: agenda setting to encourage public thinking about the issue; providing information that is interesting, understandable and relevant to individuals; establishing incentives by detailing the benefits which accrue personally and socially; skill instruction and education about resources; educating the audience to try new behaviors; and developing the supports which will help to maintain the new behaviors.

Summary

The factors which place children at risk and those which protect them from their risky environments are complex and interwoven. They require intervention on multiple levels. On an individual level, intervention should emphasize enhancing competence and developing life skills of children. Preventive intervention at the familial level is likely to be most successful if efforts focus on the family as a unit. Several programs have developed which do this, most of them specific to the domains of behavior, communication and family affect. It is likely that the more programs intervene in an integrated fashion in all of these domains, the better results they will have in promoting the protective factors in children and families at risk. Social and environmental intervention is an area deserving further study. However, some research already indicates specific programs which have shown significant impact in the lives of children at risk. Other research shows how existing institutions and programs could be altered to serve the needs of people better and thereby to prevent the problems which can attend the use of alcohol and other drugs.

Conclusion

The alcohol and other drug abuse field has witnessed significant contributions through the application of risk analysis in research and through the consequent targeting of prevention programs to reach those most in need. Risk is only part of the equation, however, and a sole focus on risk is bound to be only partly successful in reducing alcohol and other drug abuse. Protective factors are a critical component to understanding why some children, facing overwhelming odds, do not succumb to the risks that surround them.

Unfortunately, the alcohol and other drug abuse field has devoted little attention to the concept and study of protective factors. It is undoubtedly easier, after all, to specify what goes wrong rather than to discover what goes right in the lives of children at risk. There are signs that this is beginning to change, as some researchers and prevention personnel start to examine children and families at risk from a more complete and whole perspective. The contributions of the field of mental health, particularly research and intervention with children at risk due to parental mental illness, provide valuable insights upon which the alcohol and other drug abuse field might build, albeit cautiously. The indications are that many protective factors exist within individuals, families, and communities which naturally shape the outcome of alcohol and other drug use by those at risk. Some of these factors are amenable to short-term, low-level intervention. Others will require intensive and long-term involvement. Some can be promoted by working solely with individuals and families. Others may require changes in children's social environments outside the home. Still others, especially those that fall in the realm of biology and genetics, raise serious and important ethical dilemmas for preventive intervention.

The current challenge to researchers and prevention personnel is contained in two simple questions, the answers to which are quite complex. What are the factors, given a child who is at risk for abusing alcohol and other drugs, that keep him or her from using and abusing substances? And what can be done to enhance such factors? When the alcohol and other drug field has answered those questions, it will have made significant strides in tackling the ongoing problem which drug abuse poses for individuals, families and communities in our society.

Endnotes

1.There is currently no unified theory of youth at high risk for the development of alcohol and other drug abuse. There is also no single theory in other fields—e.g. mental health and child welfare—which have applied risk analysis. There are really many high risk theories arising out of different theoretical approaches (developmental, behavioral and environmental as Murray and Perry [1985] categorize them) which risk as an analytical concept has shaped and modified.

2.Additionally, it appears that three significant meetings helped to shape the direction of risk research: a National Institute of Mental Health (NIMH) workshop on the topic in June 1969; a July 1972 conference in Bled, Yugoslavia, sponsored by the International Study Group of the International Association for Child Psychiatry and Allied Professions; and a conference at Dorado Beach, Puerto Rico in October 1972 organized under the auspices of NIMH, at which the Schizophrenia Risk Research Consortium was formed.

3.The difference appears to have been one of emphasis. Garmezy's concern reflects a tension which has existed within the prevention field for some time, that being whether to focus more on disease (vulnerability) reduction or health promotion.

4.Based on a later report (Garmezy, 1983), it appears that the literature they surveyed specifically dealt with competent, urban, economically-disadvantaged, black children, though why Garmezy did not point this out in his earlier writings is unclear. The actual results of the review were not reported until later (Garmezy 1974a, 1983).

5.The Project Competence research team "reasoned that children who had mastered environments weighted with [economic] disadvantage might share attributes of competence with children resistent to psychopathology" (Garmezy, 1974b, p 85), a debatable assumption.

6.In an earlier work, Rutter (1981b) discussed Hinkle's finding based on a series of life change studies.

> [T]he people who seemed most immune to stress had an almost 'sociopathic' flavour to their personality, in that they seemed to have a shallow attachment to people, goals or groups and they readily shifted to other relationships when established relationships were disrupted. Many of these people had an accurate awareness of their own needs and limitations and avoided situations that made demands on them that they did not want or felt that they could not meet. Similarly, Lieberman (1979) noted that the elderly people who best survived crises were often aggressive, narcissistic and demanding (p 342).

7.One reason why coping skills may or may not be protective was clarified by Rutter (1981b) in his analysis of coping processes. Discussing definitions and frameworks used by other researchers, Rutter stated "that some coping processes may *increase* the risk of maladaption [*sic*] or disorder while others may improve adaptation and reduce the risks of a deviant outcome (Lazarus et al., 1980). Hence, a further essential dimension is between effective and ineffective coping. The dilemma here is how to conceptualize, let alone measure, effectiveness" (p 345. Emphasis in the original).

8.This was done, according to Quinton and Rutter (1988), to allow for comparison of comparable childhood experiences, in the case of the former prerequisite, and comparable comparison of parenting skills, in the case of the latter (p 225).

9.The Kauai study reported here is for results obtained through the children's eighteenth year. The study plans another follow-up at age 30.

10.Werner and Smith (1982) found cumulative risk factors to be those which were "key predictors of serious learning and behavior problems in childhood and adolescence, with the predictive power increasing steadily from birth to age 2, from ages 2 to 10, and from ages 10 to 18" (p 47). The factors included "low level of maternal education; a low standard of living, especially at birth, but also at ages 2 and 10; and a low rating of family stability between birth and age 2...moderate to severe perinatal stress, the presence of a congenital defect at birth, and of a moderate to marked handicap at age 10...maternal ratings of very low

or very high infant activity level at year 1, a Cattell IQ score below 80 at age 2, a PMA IQ score below 90 at age 10, and a recognized need for placement in a class for the learning disabled or for six months or more of mental health services by age 10" (p 47).

11.The researchers noted that "there were no significant ethnic differences between the resilient children and the two comparison groups, but there were no Anglo-Caucasians amongst them. None of the *haoles* on Kauai lived in chronic poverty" (Werner and Smith, 1982, p 49).

12."Whether one refers to the father or the mother, children with a Protestant parent have significantly lower CBCL [Child Behavior Check List] scores than children of parents from any other religious background. This finding is of interest since the children's self-reported religion bears no relationship to their behavior problems" (Feldman, Stiffman and Jung, p 116).

13."Critical periods are likely to occur only to the extent that concomitant variations take place in the net balance between the at-risk child's environmental protectors and stressors. It is not particularly probable that such variations will have a strong and consistent relationship with age-related developmental phases" (Feldman, Stiffman and Jung, p 166).

14.Among the variables they examined--family size, current living arrangement, sex, race, SES, age of child, and age of parents at time of child's birth, proportion of mentally ill family members, type of parental mental illness, parents' ability to function, child's physical health, parents' physical health, and discordant family relationships--Feldman, Stiffman and Jung found no significant relationships with coping skills except for current living arrangement, SES, child's age, proportion of family members with mental illness, and parents' ability to function. The relationships vary by variable and type of coping skill/competence considered. Space limitations preclude an analysis in this report, however, the findings indicate that it may be too early to dismiss coping skills out of hand as Feldman, Stiffman and Jung seem inclined to do.

Further, though the researchers found, in a multiple regression analysis, that children's coping skills and behavior problems were *negatively* correlated (Feldman, Stiffman and Jung, p 206), the conclusions one might draw are not as simple as they at first appear. Judging from their results, it appears that interpersonal skills are the least protective of the coping process repertoire. But, the authors indicated later, school and activity competence, may indeed be important for protecting the child at risk (p 239).

15.However, Hawkins, et al (1985) later stated that "no evidence of psychopathology has been found for users as opposed to nonusers, except when users are very young" (p 30).

16.How such factors relate, if indeed they do at all, still requires significant research effort. Several possibilities exist for why such results have been obtained, a full discussion of which is outside the scope of this report. It may be that such factors in some individuals precede the development toward a specific outcome, that they represent coexisting variables of a general tendency, that they predispose toward either psychopathology or alcohol or other drug abuse or both or neither. The need for caution in interpretation must be underscored.

17.Vaillant used a Pearson product-moment correlation in the first instance and multiple regression analysis in the second. The difference should explain in part the results achieved. Problems with the Vaillant study are not limited to the relationship of these potential protective factors. Zucker and Gomberg (1986) argued that numerous flaws characterized Vaillant's (1983) and Vaillant and Milovsky's (1982) interpretations and methodology including underestimating the importance of some variables, prematurely dismissing others, and conducting multiple regression analyses which might support the etiological significance of biological/genetic variables but not that of psychological and socio-cultural ones. There does seem to be merit in these contentions, though a reading of the work by Vaillant and his colleagues indicates they attempted to consider a wide range of influences in the development of alcoholism, if not always successfully.

18.Further support for this need for caution can be found in Baumrind's (1985) placing of adolescent substance use behaviors in the context of adolescent's larger need to take risks as part of the process of individuation, growth and independence.

19.Briggs, D. (1975). *Your child's self-esteem.* New York: Dolphin Books.

20.Among the workbook's authors from Developmental Research and Programs, Inc. are J. David Hawkins and Richard F. Catalano who have written several important literature reviews on alcohol and other drug abuse among high risk youth. The firm of Roberts, Fitzmahan and Associates publishes *Here's Looking At You, 2000*, a widely-acclaimed, comprehensive, K-12 drug education curriculum.

21.Berrueta-Clement, et al (1984) state that their "observations lead us to a basic conclusion about early childhood program operation: Program effectiveness cannot be guaranteed by inclusion of certain program features, such as the curriculum, staff-child ratio, facilities, or equipment. Instead, it appears that the best way to guarantee program effectiveness is to *operate* the program in such a way that a high level of program quality is assured...The style in which a program is operated is manifested in the skillful blending of program elements...Elements of particular importance are as follows: curriculum implementation, parent involvement, staff supervision, inservice training provision, teacher planning time, staff relationships, ongoing evaluation, and administrative leadership. These elements are not rigidly tied to a 'right' way of doing things; for example it is not as important which curriculum is chosen, as *that* a curriculum model is chosen to guide program operations" (p 109-110; emphasis in the original).

References

Anthony, E. J. (1974a). A risk-vulnerability model for children of psychotic parents. In E. J. Anthony and C. Koupernik (Eds), *The Child in His Family: Vol. 3. Children at Psychiatric Risk (pp. 99-121).* New York: John Wiley & Sons.

Anthony, E. J. (1974b). The syndrome of the psychologically invulnerable child. In E. J. Anthony and C. Koupernik (Eds), *The Child in His Family: Vol. 3. Children at Psychiatric Risk* (pp. 529-554). New York: John Wiley & Sons.

Anthony, E. J. (1978). A new scientific region to explore. In E. J. Anthony, C. Koupernik and C. Chiland (Eds), *The Child in His Family: Vol. 4. Vulnerable Children* (pp. 3-15). New York: John Wiley & Sons.

Anthony, E. J. (1987a). Risk, vulnerability, and resistance. In E. J. Anthony and B. J. Cohler (Eds), *The Invulnerable Child,* (pp. 3-48). New York: Guilford Press.

Anthony, E. J. (1987b). Children at high risk for psychosis growing up successfully. In E. J. Anthony and B. J. Cohler (Eds), *The Invulnerable Child* (pp. 147-184). New York: Guilford Press.

Baumrind, D. (1985). Familial antecedents of adolescent drug use: a developmental perspective, in C. L. Jones and R. J. Battjes (Eds), *Etiology of Drug Abuse: Implications for Prevention* (NIDA Research Monograph 56, pp. 13-44. DHHS Publication No. ADM 85-1335). Washington, DC: U. S. Government Printing Office.

Bavolek, S. J. (1984). An innovative program for reducing abusive parent-child interactions, *Child Resource World Review* (Report No. 2). Berkeley, CA: International Child Resource Institute.

Bell, R. (1988). Using the concept of risk to plan drug use intervention programs, *Journal of Drug Education,* 18(2), 135-142.

Benard, B. (1987, March). Protective factor research: what we can learn from resilient children. *Prevention Forum,* 7(3), 3-10. (Available from AHTDS Prevention Resource Center, 901 S. Second Street, Springfield, IL, 67204.).

Berrueta-Clement, J. R., Schweinhart, L. J., Barnett, W. S., Epstein, A. S., and Weikart, D. P. (1984). *Changed Lives: The Effects of the Perry Preschool Program on Youths Through Age 19.* Ypsilanti, MI: High/Scope Press.

Botvin, G. J. (1983). Prevention of adolescent substance abuse through the development of personal and social competence, in T. J. Lynn, C. G. Leukefeld, and J. P. Ludford (Eds), *Preventing Adolescent Drug Abuse: Intervention Strategies* (NIDA Research Monograph 47, pp. 115-140. DHHS Publication No. ADM 86-1280). Washington, DC: U. S. Government Printing Office.

Botvin, G. J. and Wills, T. A. (1985). Personal and social skills training: cognitive-behavioral approaches to substance abuse prevention, in C. S. Bell and R. Battjes (Eds), *Prevention Research: Deterring Drug Abuse Among Children and Adolescents* (NIDA Research Monograph 63, pp. 8-49. DHHS Publication No. ADM 85-1334). Washington, DC: U. S. Government Printing Office.

Bry, B. H., McKeon, P. and Pandina, R. J. (1982). Extent of drug use as a function of number of risk factors, *Journal of Abnormal Psychology,* 91(4), 273-279.

Day, T., Small, S., and Fitzsimmons, E. (1987). *Family Times.* Madison, WI: University of Wisconsin, Dean of Students Office, Wisconsin Clearinghouse.

Delaine, J. K. (1986). *Who's Raising the Family: A Workbook for Parents and Children* (2nd edition). Madison, WI: University of Wisconsin, Dean of Students Office, Wisconsin Clearinghouse.

DeMarsh, J. and Kumpfer, K. L. (1985). Family-oriented interventions for the prevention of chemical dependency in children and adolescents, in *Journal of Children in Contemporary Society,* 18(1/2), 117-151.

Developmental Research and Programs, Inc. and Roberts, Fitzmahan and Associates. (1988). *Preparing for the Drug (Free) Years: A Family Activity Book* (2nd edition). Seattle, WA: Comprehensive Health Education Foundation.

El-Guebaly, N. and Offord, D. R. (1979). On being the offspring of an alcoholic: an update, *Alcoholism: Clinical and Experimental Research,* 3(2), 148-157.

Feldman, R. A., Stiffman, A. R., and Jung, K. G. (1987). *Children at Risk: In the Web of Parental Mental Illness,* New Brunswick: Rutgers University Press.

Felner, R. D., Aber, M. S., Primavera, J., and Cauce, A. M. (1985). Adaptation and vulnerability in high risk adolescents: an examination of environmental mediators, *American Journal of Community Psychology,* 13(4), 365-379.

Felsman, J. K. and Vaillant, G. E. (1987). Resilient children as adults: a 40-year study. In E. J. Anthony and B. J. Cohler (Eds), *The Invulnerable Child* (pp. 289-314). New York: Guilford Press.

Fisher, L. (1980). Child competence and psychiatric risk: I. model and method, *Journal of Nervous and Mental Disease,* 168(6), 323-331.

Fisher, L. and Jones, J. E. (1980). Child competence and psychiatric risk: II. areas of relationship between child and family functioning, *Journal of Nervous and Mental Disease,* 168(6), 332-337.

Fisher, L., Harder, D. W., and Kokes, R. F. (1980). Child competence and psychiatric risk: III. comparisons based on diagnosis of hospitalized patient, *Journal of Nervous and Mental Disease,* 168(6), 338-342.

Fisher, L., Kokes, R. F., Cole, R. E., Perkins, P. M., and Wynne, L. C. (1987). Competent children at risk: a study of well-functioning offspring of disturbed parents. In E. J. Anthony and B. J. Cohler (Eds), *The Invulnerable Child* (pp. 211-228). New York: Guilford Press.

Fisher, L., Kokes, R. F., Harder, D. W., and Jones, J. E. (1980). Child competence and psychiatric risk: VI. summary and integration of findings, *Journal of Nervous and Mental Disease,* 168(6), 353-355.

Garmezy, N. (1952). Stimulus differentiation by schizophrenic and normal subjects under conditions of reward and punishment, *Journal of Personality,* 20, 243-276.

Garmezy, N. (1971). Vulnerability research and the issue of primary prevention, *American Journal of Orthopsychiatry,* 41, 101-116.

Garmezy, N. (1974a). Children at risk: the search for the antecedents of schizophrenia. part II: ongoing research programs, issues, and intervention, *Schizophrenia Bulletin,* 9, 55-125.

Garmezy, N. (1974b). The study of competence in children at risk for severe psychopathology, in E. J. Anthony and C. Koupernik (Eds), *The Child in His Family: Children at Psychiatric Risk,* 3, 77-97.

Garmezy, N. (1983). Stressors of childhood. In N. Garmezy and M. Rutter (Eds), *Stress, Coping, and Development in Children* (pp. 43-84). New York: McGraw-Hill.

Garmezy, N. (1985). Stress-resistant children: the search for protective factors, in J. E. Stevenson (Ed), *Recent Research in Developmental Psychopathology,* Journal of Child Psychology and Psychiatry Book Supplement No. 4, Oxford: Pergamon Press, 213-233.

Garmezy, N. and Devine, V. (1984). Project Competence: the Minnesota studies of children vulnerable to psychopathology. In N. F. Watt, E. J. Anthony, L. C. Wynne, and J. E. Rolf (Eds), *Children at Risk for Schizophrenia: A Longitudinal Perspective* (pp. 289-303). New York: Cambridge University Press.

Garmezy, N. and Neuchterlein, K. (1972). Invulnerable children: the fact and fiction of competence and disadvantage, *American Journal of Orthopsychiatry*, 42(2), 328-329.

Garmezy, N. and Streitman, S. (1973). Children at risk: the search for the antecedents of schizophrenia. part I: conceptual models and research methods, *Schizophrenia Bulletin*, 7, 14-90.

Garmezy, N., Masten, A., and Tellegen, A. (1984). The study of stress and competence in children: a building block for developmental psychopathology, *Child Development*, 55(1), 97-111.

Garmezy, N. Masten, A., Nordstrom, L., and Ferrarese, M. (1979). The nature of competence in normal and deviant children. In M. W. Kent and J. E. Rolf (Eds), *Primary Prevention of Psychopathology: Vol. III. Social Competence in Children* (pp. 23-43). Hanover, NH: University Press of New England.

Greenspan, S. I. (1985). Research strategies to identify developmental vulnerabilities for drug abuse, in C. L. Jones and R. J. Battjes (Eds), *Etiology of Drug Abuse: Implications for Prevention* (NIDA Research Monograph 56, pp. 137-154. DHHS Publication No. ADM 85-1335). Washington, DC: U. S. Government Printing Office.

Hansen, W. B. (1988, March). *Theory and Implementation of the Social Influence Model of Primary Prevention.* Paper presented at the First National Conference on Prevention Research Findings: Implications for Alcohol and Drug Abuse Program Planning, National Prevention Network, Kansas City, MO.

Hansen, W. B., Graham, J. W., Johnson, C. A., Flay, B. R., and Pentz, M. A. (1988). *Project SMART.* Pasadena: University of Southern California, Institute for Health Promotion and Disease Prevention Research.

Hansen, W. B., Johnson, C. A., Flay, B. R., Graham, J. W., and Sobel, J. (1988). Affective and social influences approaches to the prevention of multiple substance abuse among seventh grade students: results from Project SMART, *Preventive Medicine*, 17(2), 135-154.

Harder, D. W., Kokes, R. F., Fisher, L. and Strauss, J. S. (1980). Child competence and psychiatric risk: IV. relationships of parent diagnostic classifications and parent psychopathology severity to child functioning, *Journal of Nervous and Mental Disease*, 168(6), 343-347.

Hawkins, J. D., Lishner, D. M., Catalano, R. F. Jr., and Howard, M. O. (1985). Childhood predictors of adolescent substance abuse: toward an empirically grounded theory, *Journal of Children in Contemporary Society*, 18(1/2), 11-48.

Hawkins, J. D., Lishner, D. M., Jenson, J. M., and Catalano, R. F. (1987). Delinquents and drugs: what the evidence suggests about prevention and treatment programming, in B. S. Brown and A. R. Mills (Eds), *Youth at High Risk for Substance Abuse* (DHHS Publication No. ADM 87-1537, pp. 81-131). Rockville, MD: National Institute on Drug Abuse.

Helzer, J. E. and Pryzbeck, T. R. (1988). The co-occurrence of alcoholism with other psychiatric disorders in the general population and its impact on treatment, *Journal of Studies on Alcohol*, 49(3), 219-224.

Hirsch, B. J. (1981). Coping and adaptation in high-risk populations: toward an integrative model, *Schizophrenia Bulletin*, 7(1), 164-172.

Kauffman, C., Grunebaum, H., Cohler, B., and Gamer, E. (1979). Superkids: competent children of psychotic mothers, *American Journal of Psychiatry*, 136(11), 1398-1402.

King, R. D., Raynes, N. V., and Tizard, J. (1971). Patterns of residential care: sociological studies of institutions for handicapped children, cited in Quinton, D. and Rutter, M., *Parenting Breakdown: The Making and Breaking of Inter-generational Links*, Aldershot, England: Avebury, 1988.

Kokes, R. F., Harder, D. W., Fisher, L., and Strauss, J. S., (1980). Child competence and psychiatric risk: V. sex of patient parent and dimensions of psychopathology, *Journal of Nervous and Mental Disease*, 168(6), 348-352.

Kumpfer, K. L. (1987). Special populations: etiology and prevention of vulnerability to chemical dependency in children of substance abusers, in B. S. Brown and A. R. Mills (Eds), *Youth at High Risk for Substance Abuse* (DHHS Publication No. ADM 87-1537, pp. 1-72). Rockville, MD: National Institute on Drug Abuse.

Lander, H. S., Anthony, E. J., Cass, L., Franklin, L. and Bass, L. (1978). A measure of vulnerability to risk of parental psychosis. In E. J. Anthony, C. Koupernik, and C. Chiland (Eds), *The Child in His Family: Vol. 4. Vulnerable Children* (pp. 3-15). New York: John Wiley & Sons.

Lewine, R. R. J., Watt, N. F., and Grubb, T. W. (1984). High-risk-for-schizophrenia: sampling bias and its implications. In N. F. Watt, E. J. Anthony, L. C. Wynne, and J. E. Rolf (Eds), *Children at Risk for Schizophrenia: A Longitudinal Perspective* (pp. 557-564). New York: Cambridge University Press.

Macro Systems, Inc. (1986). *Literature Review on Alcohol and Youth*. Washington, DC: National Institute on Alcohol Abuse and Alcoholism.

Murphy, L. B. (1987). Further reflections on resilience. In E. J. Anthony and B. J. Cohler (Eds), *The Invulnerable Child* (pp. 84-105). New York: Guilford Press.

Murphy, L. B. and Moriarty, A. E. (1976). *Vulnerability, Coping and Growth: From Infancy to Adolescence*, New Haven: Yale University Press, 1976.

Murray, D. M. and Perry, C. L. (1985). The prevention of adolescent drug abuse: implications of etiological, developmental, behavioral, and environmental models, in C. L. Jones and R. J. Battjes (Eds), *Etiology of Drug Abuse: Implications for Prevention* (NIDA Research Monograph 56, pp. 236-256. DHHS Publication No. 85-1335). Washington, DC: U. S. Government Printing Office.

National Center for Alcohol Education (1977). A chip off the old block: parents as models for their children's behavior. In National Institute on Alcohol Abuse and Alcoholism, *The Power of Positive Parenting* (DHEW Publication No. 77-453A). Washington, DC.

National Institute on Alcohol Abuse and Alcoholism. (1987). *Sixth Special Report to the U.S. Congress on Alcohol and Health* (DHHS Publication No. ADM 87-1519). Washington, DC: U. S. Government Printing Office.

Obuchowska, I. (1974). Emotional contact with the mother as a social compensatory factor in children of alcoholics, *International Mental Health Research Newsletter*, 16(4), 2,4.

Quinton, D. and Rutter, M. (1988). *Parenting Breakdown: The Making and Breaking of Inter-generational Links*, Aldershot, England: Avebury.

Rhodes, J. E. and Jason, L. A. (1988). *Preventing Substance Abuse Among Children and Adolescents*, New York: Pergamon Press.

Robins, L. N. and Przybeck, T. R. (1985). Age of onset of drug use as a factor in drug and other disorders, in C. L. Jones and R. J. Battjes (Eds), *Etiology of Drug Abuse: Implications for Prevention* (NIDA Research Monograph 56, pp. 178-191. DHHS Publication No. 85-1335). Washington, DC: U. S. Government Printing Office.

Russell, M., Henderson, C., and Blume, S. B. (1985). *Children of Alcoholics: A Review of the Literature*, New York: Children of Alcoholics Foundation.

Rutter, M. (1974). Epidemiological strategies and spychiatric concepts in research on the vulnerable child. In E. J. Anthony and C. Koupernik (Eds), *The Child in His Family: Vol. 3. Children at Risk* (pp. 167-179). New York: John Wiley & Sons.

Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent and J. E. Rolf (Eds), *Primary Prevention of Psychopathology: Vol. III. Social Competence in Children* (pp. 49-74). Hanover, NH: University Press of New England.

Rutter, M. (1981a). Longitudinal studies: a psychiatric perspective. In S. A. Mednick, A. E. Baert, and B. P. Bachmann (Eds), *Prospective Longitudinal Research: An Empirical Basis for the Primary prevention of Psychosocial Disorders* (pp. 326-336). Oxford: Oxford University Press.

Rutter, M. (1981b). Stress, coping and development: some issues and some questions, *Journal of Child Psychology and Psychiatry*, 22(4), 323-356.

Rutter, M. (1985). Resilience in the face of adversity: protective factors and resistence to psychiatric disorder, *British Journal of Psychiatry*, 147, 598-611.

Rutter, M. and Quinton, D. (1981). Longitudinal studies of institutional children and children of mentally ill parents (United Kingdom), in S. A. Mednick, A. E. Baert, and B. P. Bachman (Eds), *Prospective Longitudinal Research: An Empirical Basis for the Primary Prevention of Psychosocial Disorders*, Oxford: Oxford University Press, 297-305.

Rutter, M. and Quinton, D. (1984). Parental psychiatric disorder: effects on children, *Psychological Medicine* 14(4), 853-880.

Santostefano, S. (1978). A biodevelopmental approach to clinical child psychology, cited in Sroufe, L. A. and Rutter, M., The domain of developmental psychopathology, *Child Development*, 55(1), 1984, 17-29.

Schorr, L. B. and Schorr, D. (1988). *Within Our Reach: Breaking the Cycle of Disadvantage*, New York: Anchor Press.

Seifer, R. and Sameroff, A. (1987). Multiple determinants of risk and invulnerability, in E. J. Anthony and B. J. Cohler (Eds), *The Invulnerable Child*, New York: Guilford Press, 51-69.

Spring, B. and Zubin, J. (1977). Vulnerability to schizophrenic episodes and their prevention in adults, in G. W. Albee and J. M. Joffe (Eds), *The Issues: An Overview of Primary Prevention*, Hanover, NH: University Press of New England, 254-284.

Sroufe, L. A. and Rutter, M. (1984). The domain of developmental psychopathology, *Child Development*, 55(1), 289-314.

Tartar, R. E. (1988). Are there inherited behavioral traits that predispose to substance abuse, *Journal of Consulting and Clinical Psychology*, 56(2), 189-196.

Tartar, R. E., Alterman, A. I., and Edwards, K. L. (1985). Vulnerability to alcoholism in men: a behavior-genetic perspective, *Journal of Studies on Alcohol*, 46(4), 329-356.

Tartar, R. E., Hegedus, A. M., Goldstein, G., Shelly, C., and Alterman, A. I. (1984). Adolescent sons of alcoholics: neuropsychological and personality characteristics, *Alcoholism: Clinical and Experimental Research*, 8(2), 216-222.

Vaillant, G. E. and Milofsky, E. S. (1982). The etiology of alcoholism: a prospective viewpoint. *American Psychologist*, 37(5), 494-503.

Wallack, L. (1985). Mass media, youth and the prevention of substance abuse: towards an integrated approach, *Journal of Children in Contemporary Society*, 18(1/2), 153-180.

Watt, N. F., Anthony, E. J., Wynne, L. C., and Rolf, J. E. (Eds), (1984). *Children at Risk for Schizophrenia: A Longitudinal Perspective*. New York: Cambridge University Press.

Werner, E. E. (1986). Resilient offspring of alcoholics: a longitudinal study from birth to age 18, *Journal of Studies on Alcohol*, 47(1), 34-40.

Werner, E. E. and Smith, R. S. (1982). *Vulnerable but Invincible: A Longitudinal Study of Resilient Children and Youth*, New York: McGraw-Hill.

Wildavsky, A. (1988). *Searching for Safety*, New Brunswick: Transaction Books.

Wisconsin Youth Alcohol and Other Drug Abuse Task Force. (1988). *Final Report.*

Zucker, R. A. and Gomberg, E. S. L. (1986). Etiology of alcoholism reconsidered: the case for a biopsychosocial process, *American Psychologist*, 41(7), 783-793.

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